Appendix E

Response to Comments Document for

Data Base for Hazardous Waste Combustors (Final Replacement Standards and Phase II)

Notice of Data Availability (67 FR 44452)

Released on July 2, 2002

U.S. Environmental Protection Agency
Office of Solid Waste
1200 Pennsylvania Avenue, NW
Washington, DC 20460

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Acknowledgment

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Contents

Introduction

The United States Environmental Protection Agency (EPA) has assembled a data base for developing "Maximum Achievable Control Technology" (MACT) standards for hazardous waste combustors: hazardous waste burning incinerators, cement kilns, lightweight aggregate kilns, boilers, and hydrochloric acid production furnaces.

The MACT standards for the "Phase I" hazardous waste combustors -- incinerators, cement kilns, and lightweight aggregate kilns -- will replace the interim standards promulgated for these sources on February 13 and 14, 2002 (67 FR 6792 and 67 FR 6968). The MACT standards for the "Phase II" hazardous waste combustors -- boilers and hydrochloric acid production furnaces -- are being proposed (and promulgated) on the same schedule as the replacement Phase I standards.

The hazardous waste combustor (HWC) data base was released for comment in a "Notice of Data Availability" on July 2, 2002 (67 FR 44452). Comments on the NODA data base were received from 52 stakeholders:

ID No.	Commenter Name
4 - 13	Reilly Industries
14	Mallinckrodt Inc.
15 - 18	Eli Lilly and Comp
19	DSM Pharmaceuticals, Inc.
20	Glaxo Smith Kline
21	ATOFina Petrochemicals, Inc.
22	Bostik Findley, Inc.
23 - 24	BASF Corp
25	Nutra Sweet Comp
26	Environmental Technology Council
27	Eastman Chemical Comp
28	Celanese Chemicals
29	Rubicon, INc.
30	General Electric Comp
31	GE Plastics Mt Vernon, Inc.
32	CIBA Specialty Chemicals Corp
33	OXY Vinyls, Inc.
34	Rhodia, Inc.
35	Eli Lilly and Company
36	Coalition for Responsible Waste Incineration (CRWI)
37	American Chemistry Council (ACC)
38	Eastman Kodak Company
39	Rhom and Haas Texas Inc.
40	Continental Cement Comp
41	Occidental Chemical Corp

42 United States Department of Energy
43 Lafarge North America
44 United States Department of the Army
45 Sunoco, Inc.
46 Rohm and Haas Company
47 Solite Corp
48 Merck and Company, Inc.
49 Dow Chemical Comp
50 Washington Demilitarization Comp
51 Chemical Waste Management, Inc.
52 Cement Kiln Recycling Coalition (CKRC)

This document contains responses to the comments that were received. It is organized by commenter ID No., as shown above.

Each comment response section is divided into the same format. First, the general contents of the comments are summarized. Next, general responses by EPA are included. This is followed by the actual commenter comments, provided to the degree reasonably possible. Many of the comments were provided in Excel spreadsheet format and handwritten notes on Excel spreadsheets. These comments are not provided in this document, but can be obtained directly from the EPA NODA docket. EPA responses to specific issues are added within the actual comments where appropriate, and specifically where EPA did not agree with the comments, or felt a response was necessary. EPA responses are highlighted in blue underlined text.

Comments from the 52 stakeholders were focused primarily on the accuracy and content of the data base. Many comments were minor changes – where a change in the value was less than 10%, and usually less than 5%. In these cases, EPA simply made the change as requested.

In cases where the requested change was more significant, EPA confirmed that the change was appropriate based on supporting information provided by the commenter, and/or test report information in the EPA files.

For the majority of the changes where EPA agreed with the commenters requested change, no response is provided by the EPA -- other than the general comment initial response that "most changes are made as requested".

All changes that were made in the data base are documented in the revised HWC Data Base, which is contained in: (1) an "Access" platform data base format, (2) individual Excel spreadsheet format, and (3) "data summary sheet" format. The revised data bases are provided as part of the background supporting information of the proposed Replacement HWC MACT Rule.

Comment ID No. 5 – Reilly Industries

Comment Summary – Comments provided on the data for Reilly boiler ID Nos. 735, 737, and 738 (also contained in the following comment ID Nos. 4, and 6-13). Commenter suggests that SREs should not be included in the database from units without air pollution control devices. Also commenter does not understand the boiler class acronyms "OIB" and "OSIB" used in the data summary sheets.

Comment Response – SREs continue to be calculated and shown in the data base for all units regardless of the use of air pollution control device. SREs can be used as an indicator of the accuracy of feedrate and emissions measurements. For example, negative SREs indicate inaccuracies in the feedrate and/or emissions measurements, or may be a result of non-detect measurements. Likewise, very high SREs for systems without air pollution control devices likely indicate similar inaccuracies. The subsequent use of SREs will consider these concerns – for example, setting negative SREs to zero; setting all SREs from units without air pollution control devices to zero; etc. See the proposed Replacement HWC MACT Rule background documents and preamble for a more detailed discussion on the use and treatment of SREs when evaluating the HWC MACT standards.

The boiler class acronyms of "OIB" and "OSIB" are used to identify "on-site" boilers – those that treat hazardous waste that was generated at the same site which the boiler hazardous waste combustion takes place (or from the same company) – and specifically excluding "commercial" units which charge a tipping fee for waste treatment and/or burn wastes that were not generated at the site of the combustor or by the company that operates the combustor. The explanation of these acronyms was inadvertently not included in the NODA data base background support document. There will be further opportunity to comment on the data base contents and its use in the upcoming proposed Replacement HWC MACT Rule, which will be based on the revised HWC data base.

Comment ID No. 5 – Reilly Industries

Docket ID No. RCRA-2002-0019
Environmental Protection Agency
Notice of Data Availability Comments
NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors
(Final Replacement Standards and Phase II)

Reilly Industries, Inc.
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Indianapolis, Indiana 46241
EPA ID No. IND 000 807 107

Facility Contact: John Jones, P.E.
Telephone: (317) 248-6427

Reilly Industries, Inc. (hereafter, Reilly) hereby submits comments on the HWC MACT Phase II Database for the three (3) hazardous waste combustion devices located at the Indianapolis, Indiana facility. The three (3) devices have assigned source identification numbers in the database of 735 (Boiler 70K), 737 (Boiler 30K), and 738 (Boiler 28K). Reilly is submitting comments on the Individual Source Summary Sheets for sources 735, 737, and 738. Reilly is also submitting comments on each of the six Pollutant Summary Sheets (i.e., chlorine, particulate matter, dioxins/furans, mercury, semivolatile metals, and low volatile metals).

In addition to the attached comments, Reilly has two general comments related to the accuracy of the database. These two comments relate to the system removal efficiency (SRE) calculations for chlorine and particulate matter (PM) and the "Boiler Class" designations.

Reilly noted during the review of the chlorine and PM Pollutant Summary Sheets that a SRE was calculated for our sources. Reilly's sources do not have any type of air pollution control device installed. SRE's for chlorine and PM are typically calculated for units that have air pollution control devices installed for the express purpose of removing these types of pollutants. Therefore, Reilly believes that the inclusion of SRE's for sources that do not have control devices results in the incorporation of inaccurate data into the database. A review of the database reveals that some of the calculated SRE's for units without control devices provide negative results. Such results may be due to the differences between sampling and analysis methods used to determine feed rates and emission rates. As such, calculating SRE's for uncontrolled units may not be an accurate use of the database. Using SRE's as a comparison tool between controlled and uncontrolled units would not be an accurate use of the database. Therefore, Reilly recommends the removal of SRE information for all units that do not have control devices.

The EPA has also included a "Boiler Class" designation in the Pollutant Summary Sheets. Reilly's sources have been assigned a classification of either OIB or OSIB depending on the particular summary sheet. These designations have not been defined by the EPA and, therefore, cannot be reviewed for accuracy by Reilly. Reilly surmises that the "Boiler Class" designations are an attempt by EPA to subcategorize sources in anticipation of doing such in the finalized standards. Without defining the classification methodology, Reilly cannot confirm or deny the designation and, therefore, inaccuracies can be introduced into the database. Perhaps the EPA is attempting to classify boilers by the type of fuel that is burned (e.g., top ends, bottom residues, etc.), the type and number of other feed streams to the unit (e.g., non-hazardous wastes, high viscosity, etc.), or the applicability of other exemptions (e.g., low risk waste, comparable fuels, etc.). Therefore, due to an inability to review the classifications for our sources, Reilly is requesting that the EPA provide another NODA to allow Reilly the opportunity to verify that the assigned classifications are accurate.

Reilly appreciates the opportunity to provide comments to the EPA on this very important basis for future regulations. If you have any questions related to our comments, please contact Mr. John Jones, P.E. at (317) 248-6427.

Comment ID No. 4 – Reilly Industries

Comment Summary – Provided comments on the data for Reilly boiler ID No. 735.

Comment Response – Made most of the requested changes to the data base. See added blue underlined text for cases where changes were not made.

Comment ID No. 4 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Boiler 70K
ID No. 735

Comment 1
Conditions Spreadsheet, 735C7 Testing Dates – This test date should be May 22, 2000 instead of May 23, 2000.

Comment 2
Emissions Spreadsheet, Condition 1 – The Chromium (+6) values for Run 1, Run 2, and Run 3 should be 0.4536 g/hr, 0.4536 g/hr, and 0.4536 g/hr, respectively. The HCl and Cl_2 Condition Average values should be 3265 g/hr and 0.454 g/hr, respectively. NOTE: The Chromium (+6) (g/hr), HCl (g/hr), and Cl_2 (g/hr) Condition Average values are sootblow corrected values and are not a straight average of the values for the three test runs. Therefore, the Condition Average Chromium (+6) (ug/dscm), HCl (ppmv), and Cl_2 (ppmv) values should be calculated using the sootblow corrected values instead of averaging the three run values. In addition, the Total Chlorine Condition Average value (ppmv) should be calculated using the HCl (ppmv) and Cl_2 (ppmv) Condition Average values instead of averaging the three run values.

Comment 3
Emissions Spreadsheet, Condition 3 – The Run 2 HC (RA) value with units of ppmv, corrected to 7% O_2, should be a non-detect (i.e., nd) value.

> EPA appreciates noting that the HC reading was apparently reported as "non-detect", but will continue to consider it as detected. HC measurements using the standard CEMS Flame Ionization Detection method are not conventionally reported as "non-detect". CEMS sensitivity is adjusted (full scale span range is reduced) so that real quantitative measurements can be made. Also CEMS readings over a 3 hour period are very unlikely to be "non-detect". Because non-detects are considered in the revised data base at full detection limit, this issue is not important. EPA does acknowledge that this measurement (and likely other HC CEMS measurements at similar levels) are potentially at the lower end of the sensitivity of typical HC FIDs used in practice.

Comment 4

Emissions Spreadsheet, Condition 6 – Run 2 of this test was aborted due to a failed leak check. Therefore, the second set of data was actually collected during Run 3. Also, a sootblow event occurred during Run 3 of the test. The Chromium (+6) (ug/dscm) Condition Average value is a sootblow corrected value and should be input as 87.61 ug/dscm based on the test report value of 2.30 g/hr. Therefore, the Condition Average value corrected to 7% O_2 should use the sootblow corrected value instead of the average of the two run values. The revised Condition Average Chromium (+6) (ug/dscm at 7% O_2) value should be 66.30 instead of 77.7.

<u>Comment 5</u>
Feedstream Spreadsheet, Condition 735C1, Feed Rates – For the Spike Streams, the average chromium value is not calculated but is input at 2.500. The calculated and correct value is 2.425.

<u>Comment 6</u>
Feedstream Spreadsheet, Condition 735C1, Feedrate MTEC Calculations – The Waste Fuel Condition Average value for mercury is not calculated correctly using one-half the detection limit and should be 1.07 instead of 1.5. Due to this calculation error, the Mercury Run 1 Total and Total Condition Average values are calculated incorrectly and should be 0.75 and 1.01, respectively, instead of 1.4 and 1.3. The Waste Fuel Condition Average values for SVM and LVM are not calculated correctly using one-half the detection limit and should be 4.0 and 20.7, respectively, instead of 3.5 and 23.4.

<u>Comment 7</u>
Feedstream Spreadsheet, Condition 735C3, Feed Rates – The Waste Fuel Condition Average values are either input values and not calculated values or have been rounded prior to averaging resulting in errors. Also, the Waste Fuel Condition Average value for Mercury (g/hr) is not calculated correctly using one-half the detection limit resulting in the MTEC value being calculated incorrectly. The City Gas Heat Content value is entered as 23,350 and should be 21,214. In addition, the Spike Streams Condition Average values are input values and not calculated values resulting in errors for Antimony, Beryllium, Cadmium, and Mercury.

> <u>No changes were made to the waste and spike feedrates in the data base. The NODA data base values appear consistent with those reported in the CoC forms. It is not clear what changes the commenter was requesting.</u>

<u>Comment 8</u>
Feedstream Spreadsheet, Condition 735C3, Feedrate MTEC Calculations – All the LVM values for the Spike Streams were not calculated correctly using one-half the detection limit. Therefore, the Total LVM (ug/dscm) values for each run and the Test Condition Average (ug/dscm) value are not correct. In addition, the Run 1 Total Mercury (ug/dscm) value is not calculated correctly using one-half the detection limit. Therefore, the Run 1 Total (ug/dscm) value should be 2.7 instead of 1.4 and the Test Condition Average (ug/dscm) value should be 1.63 instead of 1.2.

Comment 9

Feedstream Spreadsheet, Condition 735C4, Feed Rates – The Waste Fuel Condition Average values are input values and not calculated values resulting in errors to the Feed Rate, Density, and Heat Content values. The Natural Gas Heat Content value should be 21,214 instead of 23,350.

Comment 10

The "BIF Feedrate Limits" should be changed to "BIF Adjusted Tier I Feedrate Limits".

Comment 11

PCDDF Spreadsheet, Test Dates October 21-23, 1999 – The Run 1 TEQ (ng/dscm) value for 1,2,3,7,8,9-HxCDD should be 2.70E-04 instead of 2.70E-03. The corresponding value at ½ ND should be 1.35E-04 instead of 1.35E-03. The Total TEQ value for Run 1 should be 0.0032 instead of 0.0044. Also, the Condition Average value should be 0.0031 instead of 0.0035.

> The "Summary2" sheets in the individual source spreadsheets are not being updated because they will not be used in the future, as noted in the Data Base NODA background document. In the data base released in the NODA there was no attempt to update and standardize the Summary2 sheets, and the Data Base NODA specifically asked not to comment on or review the Summary2 sheets. Nonetheless, specific errors in the data that are noted from review of the Summary2 sheets by commenters will be made to the data base as required.

Comment 12

Summary2 Spreadsheet, Heat Input Rate – The "Other" Heat Input Rate for 735C1 is not linked to the correct cell and should be 28.5. The "Other" Heat Input Rate for 735C3 and 735C4 should be automatically corrected based on previous comments.

Comment 13

Summary2 Spreadsheet, HCl, Cl_2, and TCl Stack Gas Emissions – The HCl (ppmv), Cl_2 (ppmv), and TCl (ppmv) values for 735C1 were not included and should be 77.0, 0.02, and 77.1, respectively. The Baseline values should be changed accordingly because chlorine spiking occurred during 735C1 and did not occur during any of the subsequent tests.

Comment 14

Summary2 Spreadsheet, D/F TEQ Stack Gas Emissions – The value for 735C3 should be automatically corrected based on previous comments.

Comment 15

Summary2 Spreadsheet, Feedrate Characteristics – This section contained many errors. In general, there are many errors associated with using one-half the detection limit for non-detectable quantities. There were numerous errors with the % Spike and % ND calculations. The Baseline values for SVM, LVM, and TCl did not use the worst case result. This is of particular importance for TCl where spiking of chlorine occurred during 735C1 and not during other testing. Also, the TCl section does not have a column for % ND.

Comment 16

Summary2 Spreadsheet, Stack Gas Conditions – The Stack Gas Flowrate for 735C1 was not linked correctly and should be 12,874. The Stack Gas Temperature for 735C6 and 735C7 were also not linked correctly and should be 613.5 and 514.3, respectively.

Comment 17

Summary2 Spreadsheet, Individual Metal Feedrates – It appears that this entire section is not being used because the ug/dscm links go to cells that contain no data. It is suggested that this section be deleted from the spreadsheet.

<u>Comment ID No. 6 – Reilly Industries</u>

<u>Comment Summary</u> – Provided comments on the data for Reilly boiler ID No. 737, as shown below.

<u>Comment Response</u> – Made changes as requested to most of the comments. See added blue underlined text for cases where changes were not made.

<u>Comment ID No. 6 – Reilly Industries</u>

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Boiler 30K
ID No. 737

<u>Comment 1</u>
Emissions Spreadsheet, Condition 1 – The Condition Average Chromium (+6) (g/hr), HCl (g/hr), and Cl_2 (g/hr) values are sootblow corrected values and are not a straight average of the values for the three test runs. Therefore, the Condition Average Chromium (+6) (ug/dscm), HCl (ppmv), and Cl_2 (ppmv) values should be calculated using the sootblow corrected values instead of averaging the three run values. In addition, the Total Chlorine Condition Average value (ppmv) should be calculated using the HCl (ppmv) and Cl_2 (ppmv) Condition Average values instead of averaging the three run values.

<u>Comment 2</u>
Emissions Spreadsheet, Condition 3 – The Condition Average O_2 value is not calculated correctly and should be 4.6 instead of 3.97. Also, the Run 3 Stack Gas Temperature value should be 676 instead of 674.

<u>Comment 3</u>
Emissions Spreadsheet, Condition 4 – The Condition Average O_2 value is not calculated correctly and should be 6.87 instead of 6.95.

<u>Comment 4</u>
Emissions Spreadsheet, Condition 5 – The Run 2 POHC Feedrate value should be 9496 instead of 9456.

<u>Comment 5</u>
Feedstream Spreadsheet, Condition 737C1, Feedrate MTEC Calculations – The Waste Fuel Run 1 SVM and LVM values are not calculated correctly using one-half the detection limit. Also, the Run 1 City Gas SVM value is not calculated correctly using one-half the detection limit. Due to these errors, the Waste Fuel Condition Average, City Gas Condition Average, Run 1 Total, and Condition Average Total values are calculated incorrectly.

<u>Comment 6</u>

Feedstream Spreadsheet, Condition 737C4 – The waste fuel feed rate for Run 1 should be 272.6 instead of 372.6.

<u>Comment 7</u>
Feedstream Spreadsheet – The "BIF Tier I Feedrate Limit" should be changed to the "BIF Adjusted Tier I Feedrate Limits".

<u>Comment 8</u>
Summary2 Spreadsheet, Heat Input Rate – The "Other" Heat Input Rates for 737C3 and 737C4 are incorrect and should be 4.7 and 6.6, respectively.

<u>Comment 9</u>
Summary2 Spreadsheet, D/F TEQ – The value for 737C3 is linked to the wrong cell of the PCDDF worksheet and needs to be corrected.

<u>Comment 10</u>
Summary2 Spreadsheet, CO Values – The CO MHRA value for 737C2 is actually a CO RA value and should be moved to the appropriate column. The CO MHRA and RA values for 737C3 are linked to the wrong cells and should be 1.29 and 0.81, respectively, instead of 0.8 and 0.03.

<u>Comment 11</u>
Summary2 Spreadsheet, DRE Values – The maximum and minimum DRE values for 737C4 are reversed.

<u>Comment 12</u>
Summary2 Spreadsheet, Feedrate Characteristics – The errors with the SVM and LVM values for 737C1 should automatically be corrected based on previous comments. There are errors with the % Spike and % ND calculations. The Baseline values for SVM and TCl did not use the worst case result. This is of particular importance for TCl where spiking of chlorine occurred for 737C1 and not during other testing. Also, the TCl and Ash sections do not have columns for % ND.

<u>Comment 13</u>
Summary2 Spreadsheet, Stack Gas Conditions – The errors with the O_2 values for 737C3 and 737C4 should automatically be corrected based on previous comments. The stack gas temperatures for 737C3, 737C4, and 737C5 should be 664, 422, and 467, respectively.

<u>Comment 14</u>
Summary2 Spreadsheet, Individual Metal Feedrates – It appears that this entire section is not being used because the ug/dscm links go to cells that contain no data. It is suggested that this section be deleted from the spreadsheet.

Comment ID No. 7 – Reilly Industries

Comment Summary – Provided comments on accuracy of the data for Reilly boiler ID No. 738, as shown below.

Comment Response – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

Comment ID No. 7 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Boiler 28K
ID No. 738

Comment 1
Emissions Spreadsheet, Condition 1 – The CO (RA) values are incorrect and should be 16.31, 10.47, 9.50, and 12.09 for Run 1, Run 2, Run 3, and Condition Average, respectively.

No change made; NODA data base is consistent with CoC forms.

The Chromium (+6) Condition Average value should be 0.1654 g/hr. The HCl Condition Average value should be 0.719 g/hr. The Cl_2 Condition Average value should be 0.830 g/hr. NOTE: The Chromium (+6) (g/hr), HCl (g/hr), and Cl_2 (g/hr) Condition Average values are sootblow corrected values and are not a straight average of the values for the three test runs. Therefore, the Condition Average Chromium (+6) (ug/dscm), HCl (ppmv), and Cl_2 (ppmv) values should be calculated using the sootblow corrected values instead of averaging the three run values. In addition, the Total Chlorine Condition Average value (ppmv) should be calculated using the HCl (ppmv) and Cl_2 (ppmv) Condition Average values instead of averaging the three run values. Furthermore, the HCl (g/hr) value for Run 2 and the Cl_2 (g/hr) value for Run 3 are non-detect (i.e., nd) data points, and should be indicated as such.

The Stack Gas Flowrate values are incorrect and should be 8039, 8034, 8188, and 8087 for Run 1, Run 2, Run 3, and Condition Average, respectively. The O_2 values should be 5.4, 5.4, 5.7, and 5.5 for Run 1, Run 2, Run 3, and Condition Average, respectively. The temperature values should be 541, 434, 441, and 472 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 2
Feedstream Spreadsheet, Condition 738C1, Feedstream Description – The Waste Fuel Condition Average values for Ash and Chlorine are input values and should be 1168.3 g/hr and 307.6 g/hr, respectively, instead of 1201.3 g/hr and 238.7 g/hr. The City Gas Heat Content is 21,214 and should be used to calculate the Thermal Feedrate contribution from the City Gas. The Cadmium value for the Spike on Run 2 was a detectable quantity. Therefore, the "nd" needs to be deleted. The Spike Condition Average values for Ash and Chlorine are

input values and should be 1246.0 g/hr and 372.74 g/hr, respectively, instead of 1244.0 g/hr and 364.0 g/hr.

Comment 3
Feedstream Spreadsheet, Condition 738C1, Stack Gas Flow and Thermal Feedrates – The Stack Gas Flowrate and O_2 values should be automatically corrected based on previous discussions. The Total Thermal Feedrate values should be automatically corrected for Run 1, Run 2, Run 3, and Condition Average based on the revised City Gas Heat Content value.

Comment 4
Feedstream Spreadsheet, Condition 738C1, MTEC Calculations – As noted above, the Cadmium value for the Spike on Run 2 was a detectable quantity. Therefore, the “nd” needs to be deleted and the SVM calculations for the Spike Run 2, Condition Average, Total Run 2, and Total Condition Average need to be corrected.

Comment 5
Feedstream Spreadsheet – The BIF Adjusted Tier I Feedrate Limits were not included. The Adjusted Tier I Feedrate Limits for Boiler 28K are as follows:

Antimony – 334 g/hr
Arsenic – 2.56 g/hr
Barium – 55,577 g/hr
Beryllium – 4.67 g/hr
Cadmium – 6.23 g/hr
Chromium – 3.68 g/hr
Lead – 100 g/hr
Mercury – 334 g/hr
Silver – 3335 g/hr
Thallium – 556 g/hr
Total Chlorine – 4850 g/hr

Comment 6
Process Spreadsheet, Condition 738C1 – The Combustion Temperature and Steam Production Rate values presented are the maximum values for the test. The average values for Combustion Temperature and Steam Production Rate are 1620.0°F and 30,010 lb/hr, respectively.

Comment 7
Process Spreadsheet, Condition 738C2 – The Combustion Temperature and Steam Production Rate values presented are the minimum values for the test. The average values for Combustion Temperature and Steam Production Rate are 1151.1°F and 6700 lb/hr, respectively.

Comment 8

Summary 2 Spreadsheet – The incorporation of the above comments will automatically correct the values contained in the Summary 2 Spreadsheet with the exception of the following items. For TCl Feedrate, the data points for "Other" are non-detect quantities and, therefore, should be incorporated as one-half the detection limit. For Ash Feedrate in the "HW" column, the spike values are non-detect quantities and, therefore, should be incorporated as one-half the detection limit. Also, the TCl and Ash sections do not have columns for % ND.

Comment 9

Summary 2 Spreadsheet, Individual Metal Feedrates – It appears that this entire section is not being used because the ug/dscm links go to cells that contain no data. It is suggested that this section be deleted from the spreadsheet.

Comment ID No. 8– Reilly Industries

Comment Summary – Provided comments on the Chlorine Data Summary Sheet data for Reilly boilers.

Comment Response – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

Comment ID No. 8 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Chlorine Summary Spreadsheet

General Comments

Comment 1
Reilly has provided detailed comments for each of the boilers in a separate submittal. The following comments assume that database changes based on those comments will be incorporated into the Chlorine Summary Spreadsheet. Therefore, comments have not been included in this document related to items that Reilly has already provided comment (e.g., emission rates, feed rates, etc.).

Comment 2
The Chlorine Pollutant Summary Sheet includes a calculation of the System Removal Efficiency (SRE) based on MTEC feed rates and emissions. SRE's for chlorine are typically calculated for units that have air pollution control devices installed for the express purpose of removing this pollutant. Therefore, Reilly believes that the inclusion of SRE's for sources that do not have control devices results in the incorporation of inaccurate data into the database. Therefore, Reilly recommends the removal of SRE information for all units that do not have control devices.

Comment 3
The Chlorine Summary Spreadsheet contains a column titled "Boiler Class". For Reilly's Test Conditions, the "Boiler Class" column indicates "OSIB". A description of "Boiler Class" is not included in the HWC Data Base Report associated with the NODA. The acronym lists associated with the NODA do not contain a listing for "OSIB". Therefore, Reilly is not able to confirm or deny the information presented in this column. Perhaps the EPA is attempting to classify boilers by the type of fuel that is burned (e.g., top ends, bottom residues, etc.), the type and number of other feed streams to the unit (e.g., non-hazardous wastes, high viscosity, etc.), or the applicability of other exemptions (e.g., low risk waste, comparable fuels, etc.). Due to an inability to review this information, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the assigned classification is correct.

ID No. 735, Boiler 70K, Comments

<u>Comment 1</u>
Reilly agrees that Test Condition 735C1 should be classified as worst case due to the spiking of chlorine during the testing. Reilly also agrees with the classification of Test Condition 735C3 as normal because the feed rate of chlorine during this test was not maximized.

<u>Comment 2</u>
The Sootblow Status for Test Condition 735C1 should be Run 1.

<u>Comment 3</u>
The emission rates for the Condition Averages represented Sootblow Corrected results. The emission rates for the individual test runs were not corrected for the sootblow event. Therefore, the Sootblow Corrected Average for 735C1 should be marked "Yes".

<u>Comment 4</u>
The Tier Chlorine for 735C3 should be Adjusted Tier I.

ID No. 737, Boiler 30K, Comments

<u>Comment 1</u>
Reilly agrees that Test Condition 737C1 should be classified as worst case due to the spiking of chlorine during the testing. Reilly also agrees with the classification of Test Condition 735C3 as normal because the feed rate of chlorine during this test was not maximized.

<u>Comment 2</u>
The "Other" Heat Input Rate for Test Condition 737C3 should have a value of 4.7 MM Btu/hr.

<u>Comment 3</u>
The Sootblow Status for Test Condition 737C1 should be Run 2 and Run 4.

<u>Comment 4</u>
The emission rates for the Condition Averages represented Sootblow Corrected results. The emission rates for the individual test runs were not corrected for the sootblow event. Therefore, the Sootblow Corrected Average for 737C1 should be marked "Yes".

<u>Comment 5</u>
The Tier Chlorine for 737C3 should be Adjusted Tier I.

<u>Comment 6</u>
Test Condition 737C2 is listed in the "chlorine feed rate only, no stack gas emissions" section. During this test condition, neither feed stream nor stack gas measurements were taken for chlorine. Therefore, this Test Condition should not be included in the database.

Chlorine feedrate measurements are available from the CoC test report, and continue to be used as reported.

ID No. 738, Boiler 28K, Comments

Comment 1

Reilly agrees that Test Condition 738C1 should be classified as worst case due to the spiking of chlorine during the testing.

Comment 2

The “Other” Heat Input Rate for TC 738C1 should have a value of 7.7 MM Btu/hr.

Comment 3

The emission rates for the Condition Averages represented Sootblow Corrected results. The emission rates for the individual test runs were not corrected for the sootblow event. Therefore, the Sootblow Corrected Average for 738C1 should be marked “Yes”.

Comment ID No. 9– Reilly Industries

Comment Summary – Provided comments on the PM Data Summary Sheet data for Reilly boilers.

Comment Response – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

Comment ID No. 9 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Particulate Matter Summary Spreadsheet

General Comments

Comment 1

Reilly has provided detailed comments for each of the boilers in a separate submittal. The following comments assume that database changes based on those comments will be incorporated into the Particulate Matter Summary Spreadsheet. Therefore, comments have not been included in this document related to items that Reilly has already provided comment (e.g., emission rates, feed rates, etc.).

Comment 2

The PM Pollutant Summary Sheet includes a calculation of the System Removal Efficiency (SRE) based on MTEC feed rates and emissions. SRE's for PM are typically calculated for units that have air pollution control devices installed for the express purpose of removing this pollutant. Therefore, Reilly believes that the inclusion of SRE's for sources that do not have control devices results in the incorporation of inaccurate data into the database. Therefore, Reilly recommends the removal of SRE information for all units that do not have control devices.

Comment 3

The Particulate Matter Summary Spreadsheet contains a column titled "Boiler Class". For Reilly's Test Conditions, the "Boiler Class" column indicates "OIB". A description of "Boiler Class" is not included in the HWC Data Base Report associated with the NODA. The acronym lists associated with the NODA do not contain a listing for "OIB". Therefore, Reilly is not able to confirm or deny the information presented in this column. Perhaps the EPA is attempting to classify boilers by the type of fuel that is burned (e.g., top ends, bottom residues, etc.), the type and number of other feed streams to the unit (e.g., non-hazardous wastes, high viscosity, etc.), or the applicability of other exemptions (e.g., low risk waste, comparable fuels, etc.). Due to an inability to review this information, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the assigned classification is correct.

ID No. 735, Boiler 70K, Comments

Comment 1

Reilly agrees that Test Condition 735C3 should be classified as worst case due to the spiking of ash to establish the feed rate limit.

ID No. 737, Boiler 30K, Comments

Comment 1

Reilly agrees that Test Condition 737C3 should be classified as worst case due to the spiking of ash to establish the feed rate limit.

Comment 2

Test Condition 737C2 is listed in the "Ash Feedrates Only, No Stack Gas PM Emissions" section. Test Condition 737C2 was a low temperature Certification of Compliance test. A minimum temperature limit was established during this test based on demonstrating compliance with the CO emissions limit. Samples of the waste feed stream and stack gas were not obtained or analyzed for ash/PM. Therefore, Test Condition 737C2 should be removed from the Particulate Matter Summary Spreadsheet.

Ash feedrate measurements were reported in the CoC, and continue to be used as reported.

ID No. 738, Boiler 28K, Comments

Comment 1

Reilly agrees that Test Condition 738C1 should be classified as worst case due to the spiking of ash to establish the feed rate limit.

Comment 2

For the Ash Feedrate MTEC Condition Average, the hazardous waste value should be 76.5 instead of 58 and the Spike value should be 40.8 instead of 60.

Comment ID No. 10– Reilly Industries

Comment Summary – Provided comments on the PCDD/PCDF Metal Data Summary Sheet data for Reilly boilers.

Comment Response – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

Comment ID No. 10 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Dioxin/Furan Summary Spreadsheet

General Comments

Comment 1

Reilly has provided detailed comments for each of the boilers in a separate submittal. The following comments assume that database changes based on those comments will be incorporated into the Dioxin/Furan Summary Spreadsheet. Therefore, comments have not been included in this document related to items that Reilly has already provided comment (e.g., emission rates, feed rates, etc.).

Comment 2

The Dioxin/Furan Summary Spreadsheet contains a column titled “Boiler Class”. For Reilly’s Test Conditions, the “Boiler Class” column indicates “OIB”. A description of “Boiler Class” is not included in the HWC Data Base Report associated with the NODA. The acronym lists associated with the NODA do not contain a listing for “OIB”. Therefore, Reilly is not able to confirm or deny the information presented in this column. Perhaps the EPA is attempting to classify boilers by the type of fuel that is burned (e.g., top ends, bottom residues, etc.), the type and number of other feed streams to the unit (e.g., non-hazardous wastes, high viscosity, etc.), or the applicability of other exemptions (e.g., low risk waste, comparable fuels, etc.). Due to an inability to review this information, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the assigned classification is correct.

ID No. 735, Boiler 70K, Comments

Comment 1

Reilly agrees that Test Conditions 735C3 and 735C4 should be classified as “NA”, not applicable, for Dioxin/Furans due to the unit being a liquid fired boiler with no APCDs.

> PCDD/PCDF data from CoC testing from boilers without air pollution control devices has been determined be closer to “normal”, as opposed to worst case or unknown. Although CoC testing was conducted under worst case combustion conditions (low temperature, low residence time), other factors, such as boiler temperature profile, may have a more dominant influence on PCDD/PCDF emissions. See the proposed Replacement HWC

MACT Rule background documents and preamble for more detailed discussion of the rationale of characterizing PCDD/PCDF CoC test conditions for boilers without air pollution control devices.

Comment 2
The Boiler Type is specified as WT for Test Conditions 735C3 and 735C4. It is assumed that "WT" is an acronym for "watertube" since the Acronym Lists associated with this NODA does not contain this designation. If this assumption is correct, Reilly agrees with this designation.

Commenter is correct that "WT" is used to identify watertube boilers.

Comment 3
The Sootblow Status for Test Condition 737C4 is designated as "U", unknown. There was no sootblow event during this Test Condition. Since there is no acronym in the Data Summary Sheet Acronym List addressing this situation, it is not known if a more appropriate designation is warranted.

ID No. 737, Boiler 30K, Comments

Comment 1
Reilly agrees that Test Conditions 737C3 and 737C4 should be classified as "NA", not applicable, for Dioxin/Furans due to the unit being a liquid fired boiler with no APCDs.

Comment 2
The Boiler Type is specified as WT for Test Conditions 737C3 and 737C4. It is assumed that "WT" is an acronym for "watertube" since the Data Summary Sheet Acronym List does not contain this designation. If this assumption is correct, Reilly agrees with this designation.

Comment 3
The Sootblow Status for Test Condition 737C4 is designated as "U", unknown. There was no sootblow event during this Test Condition. Since there is no acronym in the Data Summary Sheet Acronym List addressing this situation, it is not known if a more appropriate designation is warranted.

A blank or "N" is used to identify that no sootblowing was used during the test condition.

Comment ID No. 11– Reilly Industries

Comment Summary – Provided comments on the Low Volatile Metal Data Summary Sheet data for Reilly boilers.

Comment Response – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

Comment ID No. 11 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Low Volatile Metal Summary Spreadsheet

General Comments

Comment 1

Reilly has provided detailed comments for each of the boilers in a separate submittal. The following comments assume that database changes based on those comments will be incorporated into the Low Volatile Metal Summary Spreadsheet. Therefore, comments have not been included in this document related to items that Reilly has already provided comment (e.g., emission rates, feed rates, etc.).

Comment 2

The LVM Feedrate MTEC Condition Average calculations sometimes showed all of the LVM originating from the hazardous waste when significant portions came from a spiking stream. Other times, amounts from the spiking stream were differentiated from the hazardous waste. If information on the differentiation between the HW, Spike, and Other streams is important, then it is suggested that this section be corrected. Otherwise, only the total amounts need to be provided. In addition, the ND % column has sometimes been calculated and at other times not. Once again, if this information is important, this column needs to be corrected.

> As possible based on available information, metal and chlorine feed contributions were attributed to the following feed categories: actual hazardous waste, "spiked" feedstreams, raw materials, coal, and "other" feeds (such as tires, natural gas, fuel oil, etc.).

Comment 3

The information presented in the Individual Metal Feedrates columns must match the information contained in the Individual Source Data Sheets. The Individual Source Data Sheets did not contain calculations for the individual metal feedrates and, therefore, could not be compared to the information presented in the Low Volatile Metal Summary Sheet. The absence of this information does not allow Reilly the opportunity to verify its accuracy. Therefore, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the Individual Metal Feedrate information is correct.

All data contained in the Data Summary Sheets was documented in the individual source data sheets. There are no additional feedrate data in the Data Summary Sheets that are not contained in the individual source data sheets.

Comment 4

The Low Volatile Metals Summary Spreadsheet contains a column titled "Boiler Class". For Reilly's Test Conditions, the "Boiler Class" column indicates "OSIB". A description of "Boiler Class" is not included in the HWC Data Base Report associated with the NODA. The acronym lists associated with the NODA do not contain a listing for "OSIB". Therefore, Reilly is not able to confirm or deny the information presented in this column. Perhaps the EPA is attempting to classify boilers by the type of fuel that is burned (e.g., top ends, bottom residues, etc.), the type and number of other feed streams to the unit (e.g., non-hazardous wastes, high viscosity, etc.), or the applicability of other exemptions (e.g., low risk waste, comparable fuels, etc.). Due to an inability to review this information, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the assigned classification is correct.

ID No. 735, Boiler 70K, Comments

Comment 1

The Tier column should indicate I, I, and III for Arsenic, Beryllium, and Chromium for Test Condition 735C1. The Tier column should indicate I, I, and I for Arsenic, Beryllium, and Chromium for Test Condition 735C3. Also, the Tier column should indicate I, I, and I for Arsenic, Beryllium, and Chromium for Test Condition 735C6.

Comment 2

Spiking of ash, chlorine, and hexavalent chromium occurred during Test Condition 735C1. Spiking of ash occurred during Test Condition 735C3. Spiking of hexavalent chromium occurred during Test Condition 735C6. Therefore, the Spiking column should indicate Yes, No, and Yes for Test Conditions 735C1, 735C3, and 735C6, respectively.

Comment 3

The Worst Case versus Normal column should identify Test Condition 735C1 as WC due to spiking of hexavalent chromium to establish a Tier III limit. Test Condition 735C6 should be identified as IB (i.e., in between) because spiking of hexavalent chromium occurred but only for the purpose of determining a conversion ratio to trivalent chromium in the combustion system.

ID No. 737, Boiler 30K, Comments

Comment 1

Test Condition 737C2 was a low temperature Certification of Compliance test. A minimum temperature limit was established during this test based on demonstrating compliance with the CO emissions limit. Samples of the waste feed stream and stack gas were not obtained or analyzed for metals. Therefore, Test Condition 737C2 should be removed from the Low Volatile Metal Summary Spreadsheet.

Feedrate data for 737C2 were taken from the CoC test report, and continue to be used as reported.

Comment 2
Spiking of ash, chlorine, and hexavalent chromium occurred during Test Condition 737C1. Spiking of ash occurred during Test Condition 737C3. Therefore, the Spiking column should indicate Yes and No for Test Conditions 737C1 and 737C3, respectively.

Comment 3
The Tier column should indicate I, I, and III for Arsenic, Beryllium, and Chromium for Test Condition 737C1. The Tier column should indicate I, I, and I for Arsenic, Beryllium, and Chromium for Test Condition 737C3.

Comment 4
The Worst Case versus Normal column should identify Test Condition 737C1 as WC due to spiking of hexavalent chromium to establish a Tier III limit.

ID No. 738, Boiler 28K, Comments

Comment 1
Spiking of ash, chlorine, and hexavalent chromium occurred during Test Condition 738C1. Therefore, the Spiking column should indicate Yes for Test Condition 738C1.

Comment 2
The Tier column should indicate I, I, and III for Arsenic, Beryllium, and Chromium for Test Condition 738C1.

Comment 3
The Worst Case versus Normal column should identify Test Condition 738C1 as WC due to spiking of hexavalent chromium to establish a Tier III limit.

<u>Comment ID No. 12– Reilly Industries</u>

<u>Comment Summary</u> – Provided comments on the Semivolatile Metal Data Summary Sheet data for Reilly boilers.

<u>Comment Response</u> – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

<u>Comment ID No. 12 – Reilly Industries</u>

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Semivolatile Metal Summary Spreadsheet

<u>General Comments</u>

<u>Comment 1</u>

Reilly has provided detailed comments for each of the boilers in a separate submittal. The following comments assume that database changes based on those comments will be incorporated into the Semivolatile Metal Summary Spreadsheet. Therefore, comments have not been included in this document related to items that Reilly has already provided comment (e.g., emission rates, feed rates, etc.).

<u>Comment 2</u>

The SVM Feedrate MTEC Condition Average calculations show all of the SVM originating from the hazardous waste. Some portion of the SVM originated from the natural gas and spike streams. If information on the differentiation between the HW, Spike, and Other streams is important, then it is suggested that this section be corrected. Otherwise, only the total amounts need to be provided. In addition, the ND % column has sometimes been calculated and at other times not. Once again, if this information is important, this column needs to be corrected.

<u>Comment 3</u>

The information presented in the Individual Metal Feedrates columns must match the information contained in the Individual Source Data Sheets. The Individual Source Data Sheets did not contain calculations for the individual metal feedrates and, therefore, could not be compared to the information presented in the Low Volatile Metal Summary Sheet. The absence of this information does not allow Reilly the opportunity to verify its accuracy. Therefore, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the Individual Metal Feedrate information is correct.

<u>Comment 4</u>

The Semivolatile Metals Summary Spreadsheet contains a column titled “Boiler Class”. For Reilly’s Test Conditions, the “Boiler Class” column indicates “OSIB”. A description of “Boiler Class” is not included in the HWC Data Base Report associated with the NODA. The acronym lists associated with the NODA do not contain a listing for “OSIB”. Therefore, Reilly is not able to confirm or deny the information presented in this column. Perhaps the EPA is attempting to classify boilers by the type of fuel that is burned (e.g., top ends, bottom residues, etc.), the type and number of other feed streams to the unit (e.g., non-hazardous wastes, high viscosity, etc.), or the applicability of other exemptions (e.g., low risk waste, comparable fuels, etc.). Due to an inability to review this information, Reilly requests that the EPA provide another NODA to allow Reilly the opportunity to verify that the assigned classification is correct.

ID No. 735, Boiler 70K, Comments

Comment 1

The Tier column should indicate I and I for Lead and Cadmium, respectively, for Test Conditions 735C1 and 735C3.

ID No. 737, Boiler 30K, Comments

Comment 1

Test Condition 737C2 was a low temperature Certification of Compliance test. A minimum temperature limit was established during this test based on demonstrating compliance with the CO emissions limit. Samples of the waste feed stream and stack gas were not obtained or analyzed for metals. Therefore, Test Condition 737C2 should be removed from the Semivolatile Metal Summary Spreadsheet.

Comment 2

The Tier column should indicate I and I for Lead and Cadmium, respectively, for Test Conditions 737C1 and 737C3.

ID No. 738, Boiler 28K, Comments

Comment 1

The Tier column should indicate I and I for Lead and Cadmium, respectively, for Test Condition 738C1.

Comment ID No. 13– Reilly Industries

Comment Summary – Provided comments on the Mercury Data Summary Sheet data for Reilly boilers.

Comment Response – Made most of the changes as requested. See added blue underlined text for cases where changes were not made.

Comment ID No. 13 – Reilly Industries

Reilly Industries, Inc.
HWC MACT Phase II NODA Comments
Mercury Summary Spreadsheet

General Comment

Comment 1

Reilly has provided detailed comments for each of the boilers in a separate submittal. The following comments assume that database changes based on those comments will be incorporated into the Mercury Summary Spreadsheet. Therefore, comments have not been included in this document related to items that Reilly has already provided comment (e.g., emission rates, feed rates, etc.).

ID No. 735, Boiler 70K, Comments

Comment 1

Reilly agrees that Test Conditions 735C1 and 735C3 should be classified as normal because the feed rate of mercury during these tests was not maximized.

ID No. 737, Boiler 30K, Comments

Comment 1

Reilly agrees that Test Conditions 737C1 and 737C3 should be classified as normal because the feed rate of mercury during these tests was not maximized.

Comment 2

Test Condition 737C2 was a low temperature Certification of Compliance test. A minimum temperature limit was established during this test based on demonstrating compliance with the CO emissions limit. Samples of the waste feed stream and stack gas were not obtained or analyzed for metals. Therefore, Test Condition 737C2 should be removed from the Mercury Summary Spreadsheet.

ID No. 738, Boiler 28K, Comments

Comment 1

Reilly agrees that Test Condition 738C1 should be classified as normal because the feed rate of mercury during this test was not maximized.

<u>Comment ID No. 14 – Mallinckrodt Inc.</u>

<u>Comment Summary</u> – Provided comments on the data for the Mallinckrodt boilers (ID Nos. 778 and 1000).

<u>Comment Response</u> – Made changes as requested.

<u>Comment ID No. 14 – Mallinckrodt Inc.</u>

Mallinckrodt Inc.
Phase II HWC MACT
NODA Comments

<u>ID No. 778, Boiler No. 1, Individual Source Comments</u>

<u>Comment 1</u>
Source Spreadsheet, Source Location – 8801 Capital Boulevard.

<u>Comment 2</u>
Source Spreadsheet, Combustor Characteristics – John Zinc should be spelled John Zink.

<u>Comment 3</u>
Source Spreadsheet, Capacity – The capacity should read 18.6 instead of 19.

<u>Comment 4</u>
Source Spreadsheet, Sootblowing – Yes. Once per day for approximately 5 minutes.

<u>Comment 5</u>
Source Spreadsheet, Stack Characteristics, Stack Height – 50 Feet.

<u>Comment 6</u>
Source Spreadsheet, Stack Characteristics, Gas Temperature – Should be 636 instead of 0.

<u>Comment 7</u>
Condition Spreadsheet, Test Condition 778C10, Report Name/Date – Change the date of the report to read 8/27/98.

<u>Comment 8</u>
Condition Spreadsheet, Test Condition 778C11 Report Name/Date – Change the date of the report to read 8/27/98.

<u>Comment 9</u>
Feed Spreadsheet, Feedrate MTEC Calculations – The Chlorine Condition Average value for the Waste Feed is not calculated correctly. This needs to either be corrected to 7% oxygen or an average of the three run values.

Comment 10

Feed Spreadsheet, Feed Description, Spiking Material – For Run 2, the Lead Feedrate should be a detectable quantity at 0.001 g/hr. Also for Run 2, the Cadmium Feedrate should be a non-detectable quantity at 0.002 g/hr.

Comment 11

Summary2 Spreadsheet, Feedrate Characteristics – The Mercury HW contribution has the value divided in half due to the non-detectable quantities. However, the referenced cell in the Feed Spreadsheet has already performed this operation. Also, the Ash HW contribution is a sum of the HW and Spike material. However, the summation uses the Condition Average for the HW and the Run 1 value for the Spike. The Spike should use the Condition Average value for this summation. This error also extends to the Spike % calculation.

Comment 12

Summary2 Spreadsheet, Individual Metal Feedrates – The Pb, Cd, As, Be and Sb values are being divided in half due to being non-detectable quantities. However, the referenced cells have already performed this operation.

ID No. 1000, Boiler No. 2, Individual Source Comments

Comment 1

Source Spreadsheet, Sootblowing – Yes. Once per day for approximately 5 minutes.

Comment 2

Source Spreadsheet, Stack Characteristics – Diameter is 2.75 feet. Height is 50 feet. Gas velocity is approximately 31 ft/sec. Stack temperature is approximately 616°F.

Comment 3

Feed Spreadsheet, Feedrate Description – The K083 Barium values for Run 2 and Run 3 are both non-detectable quantities.

Comment 4

Summary2 Spreadsheet, Feedrate Characteristics – For Hg in the HW, the reference is to an incorrect location. Also, the value is being divided in half due to the non-detectable quantity. However, this operating is already being performed in the Feed Spreadsheet.

Comment 5

Summary2 Spreadsheet, Feedrate Characteristics - The Ash HW contribution is a sum of the HW and Spike material. However, the summation uses the Condition Average for the HW and the Run 1 value for the Spike. The Spike should use the Condition Average value for this summation. This error also extends to the Spike % calculation.

Comment 6

Summary2 Spreadsheet, Stack Gas Conditions – The stack gas flow rate should be 4233 instead of 4133.

Comment 7

Summary2 Spreadsheet, Individual Metal Feedrates – The Pb, Cd, As, Be and Sb values all are referencing the wrong cell in the Feed Spreadsheet. Also, each of these values is being divided in half due to being non-detectable quantities. However, the referenced cells have already performed this operation.

ID No. 778, Boiler No. 1, Pollutant Summary Sheet Comments

Comment 1

LVM Summary Sheet, Spiking – Ash was spiked during the testing. LVM was not spiked during the testing.

Comment 2

SVM Summary Sheet – Cadmium is Tier 1.

ID No. 1000, Boiler No. 2, Pollutant Summary Sheet Comments

Comment 1

LVM Summary Sheet - Ash was spiked during the testing. LVM was not spiked during the testing.

Comment 2

SVM Summary Sheet – Cadmium is Tier 1.

Comment ID No. 15 and 16 (identical) – Eli Lilly and Company

Comment Summary – Provided comments on general issues of handling detection limits in stack gas emissions and feeds, method detection limits, and classifying test conditions. Provided couple comments on Unit ID No. 728 data. Also provided comment ID Nos. 17 and 18 (containing new test reports and Excel data files for new test reports).

Comment Response – Individual responses to each general issue are included in blue underline after each of the issues. Specific database changes were made as requested.

Comment ID No. 15 and 16 (identical) – Eli Lilly and Company

August 16, 2002

RCRA Information Center (RIC)
Office of Solid Waste (5305G)
U. S. Environmental Protection Agency Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue NW
Washington, DC 20460-0002

Re: Docket number RCRA-2002-0019

Eli Lilly and Company (Lilly) is pleased to submit comments on NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (67 FR 44452). Lilly operates several hazardous waste incinerators that safely and effectively treat many Lilly waste streams.

Lilly has reviewed the database in general, and specifically checked the information included for our incinerators. In general, Lilly is concerned about the quality, completeness and transparency of the database. Examples of evidence related to our concerns are as follows:

1. The combustor type for source # 728, Lilly Mayaguez, is listed in the individual source data sheet as a "Hearth", but in the PM data summary sheet it is listed as a "Fixed hearth" combusting both liquid and solid waste while in the chlorine (Cl) data summary sheet it is listed as "Liq inj" combusting liquid waste. The Cl data summary sheet is accurate, but the inconsistencies are disturbing because the summary sheets were supposedly developed from the detailed sheets.

    In the NODA, as the comment mentions, for source ID No. 728, the combustor type in the PM data summary sheet and individual source data sheet were incorrectly identified as a hearth incinerator, and will be changed to liquid injection.

2. Lilly facility # 701, present in the original database used to develop the 1999 standards, was inappropriately removed from the current version of the database. It is a RCRA-permitted, rotary kiln incinerator that is currently combusting hazardous waste. According to the criteria given on page 44456, section VI. A. of the Federal Register notice, this source clearly should not have been removed. Its removal is evidence of inconsistent criteria being applied regarding the inclusion or exclusion of data.

Unit ID No. 701 was removed from the NODA database because the source indicated in its Notice of Intent to Comply (that was provided to the EPA) that it was not intending to comply with the 1999 HWC MACT rule (and likely not with the Interim Standards HWC MACT rule). At the request of the commenter, EPA has been put the source back into the revised HWC data base. EPA has used consistent procedures for including or excluding units and data from the HWC data base. Specifically, units that are currently operating and burning hazardous wastes, and those which are expected to be operating at the time of the proposed Replacement HWC MACT Rule, have been included in the data base. Units which are currently not operating, or those which are expected to shutdown prior to the Replacement HWC MACT Rule, have not been included in the data base.

3. There is evidence that additional information that is not in the current individual source data is being incorporated into the summary sheets. An example is the chlorine summary sheet references to "NE-Cl2 not measured" in the comment field. First of all there is no definition of the abbreviation "NE." Second, no documentation for this determination is presented in the individual source data. Third, there are inconsistencies as to whether Cl2 was measured or speciated. See tests number 463C10 and 470C12, for example, which both indicate that Cl2 was measured, yet notes in the summary sheets indicate "NE." This situation is evidence of the difficulty outside reviewers are experiencing in trying to verify EPA's decisions and determinations in the database.

As discussed in the NODA Background Document, in the NODA data base release, the condition description flags are not contained in the individual source data files, only in the Data Summary Sheets. In the revised Database, all information will be contained in a single Access platform database.

The "NE" indicates "not evaluated" as described in the NODA Data Base Background Document. Total chlorine data were rated as "NE" if Cl2 was not considered to be included as part of the stack gas sampling train catch (for example, if Method 26 was used for HCl, but Cl2 was not analyzed or reported). Alternatively, if an older test method was used for HCl, but also caught Cl2 because of the use of caustic liquid impinger solution, the data were considered to include both HCl and Cl2 (total chlorine), and was not rated as NE. This is identical to how the chlorine data were handled in the

1999 HWC MACT Rule. Also, see the proposed Replacement HWC MACT Rule background document for more detailed information on the handling and classification rating for chlorine.

The individual data source sheets and Access data base clearly identify if Cl2 was measured. Cl2 was not measured during 463C10 and thus is given an NE rating. Cl2 was measured during 470C12 and was incorrectly assigned an NE rating. This has been corrected.

Because of the issues with the current version of the database, Lilly encourages the agency to accept corrections and additions to the information in the database even after the close of this comment period. This is particularly important for data that is modified, added or restored as a result of comments received by the Agency during this relatively short comment period. The Agency should strive for a complete, transparent and quality database to support this rulemaking.

Corrections to the database will continue to be made as they are identified. There will be further opportunity to comment on the data base as part of the proposed Replacement HWC MACT Rule.

SPECIFIC COMMENTS:

1. Corrections to Source ID #728

Eli Lilly and Company (Lilly) has reviewed the information in the database related to Source ID 728, Lilly Mayaguez facility. Lilly requests that the following corrections be made:

Detailed Data File, Source Description: Change "sister facilities" from 4 to 0; Change "combustor type" from Hearth to Liquid Injection; Capacity is 12 MM Btu/hr; Soot Blowing should be "no;" Supplemental Fuel is Kerosene; Change "stack height" from 39 feet to 57 feet; Change "gas velocity" from 13.5 ft/sec to 44 ft/sec.

Detailed Data File, Cond. Description: Change "cond descr" from "?" to "Trial Burn."

Detailed Data File, Stack Gas Emissions 2, Change carbon tetrachloride DRE% in run 1 from 99.9987 to 99.9998; change methylene chloride DRE% in run 1 from 99.9987 to 99.998; change methylene chloride DRE% in run 3 from 99.994 to 99.993.

Detailed Data File, Feedstream 2, Chlorine: It is unclear how the wt% values for chlorine concentration in waste streams in the test report (reported to 3 significant figures) are converted into ppmw with 6+ significant figures. For example, the main liquid waste for run #1 was reported as 27.0 wt. percent chlorine, but is shown in the data file as 277095.28 ppmw. Lilly suggests that this calculation be given a quality check.

No change is made. This conversion is accurate. The data base value is sufficiently accurate.

PM Summary Table: Change "System Design" from "fixed hearth" to liquid injection; change "HW type" from "liquid, solid" to "liquid."

2. Deletion of Source ID #701

Lilly Source ID # 701, Clinton Bartlett Snow Incinerator, was present in the 1996 database, but was inappropriately deleted from the current database. Reportedly, the Agency removed this source because it believes that Source 701 will close in the future. However, this rationale directly conflicts with the criteria stated in the July 2, 2002 Federal Register notice. Section VI. A. of the federal register notice states that "the data bases do not include information from sources no longer burning hazardous waste" and "….we conclude that data from currently operating combustors are adequate." Therefore, as long a source is currently burning hazardous waste, it should be included in the database.

The federal register criteria are distinctly different than what EPA apparently practiced in developing the database. The potential for future operation of a source is irrelevant when compiling a database of "currently operating" combustors. In order to assure that its database is complete and does not have the appearance of bias, the Agency should verify the operational status of sources with the owner/operators.

Source ID # 701 is currently operating, burning hazardous waste, and should be restored to the database. Once restored, Lilly reserves the right to review and correct the data in a future version of the database.

<u>As discussed above, Source ID No. 701 has been added back into the database.</u>

3. Data on Other Currently Operating Lilly Sources

Lilly operates three liquid waste incinerators that are not represented in the current database. They are designated by Lilly as T49, (Lafayette, IN), and TO3 and TO4 (Clinton, IN). These are RCRA "similar" units that were permitted through a single trial burn test conducted on TO3 in 1986. For EPA's convenience, Lilly has created detailed data files following the pattern in the current database for these three sources. Condition 1 in the data files established permit limits for HCl emissions; condition 2 established permit limits related to particulate matter (PM) emissions.

Lilly requests that data for T49, TO3, and TO4 be added to the database as three distinct sources in order to provide proper weighting in relation to the universe of operating incinerators. Once added, Lilly reserves the right to review and correct the data in a future version of the database. Lilly will forward a copy of the test report with its paper submittal of these comments.

<u>The supplied test report data for units T49 in Lafayette, IN, and TO3 and TO4 in Clinton, IN have been added to the revised data base as requested.</u>

4. Test Condition Descriptions

EPA has requested comment on its classification of test conditions as normal (N), worst case (WC), worst case-high emissions (WC-HE), in-between (IB), or not applicable (NA). Lilly believes that the classification scheme is overly complex and potentially prejudicial with regards to future data manipulation. Lilly suggests that the classifications be reduced to two.

The first category would be assigned to test conditions that were used to establish permit limits for a particular pollutant. For example, if an ash limit was established during a test where PM was measured, then that condition could be designated as “permit setting” or “PS.” The use of the classification “worst case” in this instance seems prejudicial; especially when it is obvious that “worst case” is not always worst case as evidenced by the Agency’s use of the classification “worst-case, high emission.”

The second category Lilly suggests for all other test conditions is “normal.” Remaining test conditions could be considered to represent normal operation within the operating envelope established by PS test conditions. To the extent that emission measurements differ, this could be considered to represent the normal variation in source operation or measurement accuracy.

> No general changes are made to the test condition description scheme as used in the NODA. EPA does not understand what the commenters suggested classification scheme would add; it appears the commenters suggested scheme is similar to that being used by the EPA. See the proposed Replacement HWC MACT Rule background documents and preamble for a detailed discussion of the condition classification scheme. Generally, conditions determined to be under “normal” operations are identified as such. Conditions under “worst-case” operations are identified. In some cases, conditions have been determined to be “in-between” worst case operations and normal operations. Other conditions are identified as “not evaluated” due to reasons including baseline, no waste burning operations, research and demonstration testing, etc.

5. EPA’s Response to ACC/Eastman Comments Regarding Interpretation of Less Than Values.

Appended to the HWC Data Base Report is the “Response to Comments on the June 2000 Phase II Hazardous Waste Combustor MACT Data Base Notice of Data Availability”, October 2000. Under Section 4.7, EPA responded to comments by ACC and Eastman regarding an EPA’s inaccurate interpretation of less than values in Eastman’s test reports. EPA states that Eastman’s reporting did not follow the “standard” convention. EPA did not cite a reference for its assertion that there is a “standard” convention. In contrast, it is our experience that the reporting convention used by Eastman is the norm! Therefore, it is incumbent upon the Agency, in the interest of producing a quality database, to identify and correct any data that is affected by the Agency’s misinterpretation of reported “less than” values that appear in test reports. EPA’s statement that “we did not (and will not) go back to the raw data” is inappropriate and not in accord with the espoused principles of using best science in rulemaking.

> Stack gas emissions measurements at non-detect levels are being considered at the full detection limit in the revised database. Thus, this issue is not longer of concern.

Nonetheless, EPA believes that for the vast majority of cases in the data base, when at least one fraction of the sampling train was detected, the result was reported as fully detected, whether or not another fraction of the train was non-detect; and that the total reported value was the sum of the detected and non-detected sampling train fractions. Alternately, the value was reported as non-detect only when all fractions of the train were non-detect. Thus, it was appropriate to divide reported non-detects by one-half (if desiring to treat non-detects at one-half). When this convention was not followed (i.e., when any fraction of the train was non-detect the result was reported as non-detect even if another fraction was detected), such as the situation with the Eastman Arkansas boiler, EPA agrees it was inappropriate to divide the reported non-detect value by one-half since detected values would be incorrectly reduced by one-half. EPA was not prepared or likely able to identify the detection status of the back half and front half of the sampling trains due to lack of detailed supporting information in the CoC and trial burn reports. Additionally EPA suggested that it was not necessary because the Eastman Arkansas reporting convention appeared to be rarely if ever used, as evidenced by the very few other situations where this was reported to occur (Department of Army chemical weapons facilities were the only other group to identify this problem).

6. Interpretation of Reported Data That May Be Unachievable When Following Current Methods and Quality Practices.

Over the course of the time spanned by test reports used in the database (i.e. approximately 1985 to present), EPA has promulgated many new sampling and analytical (S&A) procedures, and changed and improved many others. Quality requirements and practices have also been implemented, changed and improved. Presumably, the Agency will require current state-of-the-art sampling and analysis, of defensible quality, to demonstrate compliance with the HWC MACT standards. However, some of the results in the database appear to be below values that are obtained through typical application of current S&A procedures, and application of current standard quality practices.

As an example of the concern, Lilly Mayaguez, (source # 728) reported an HCl emissions value of <0.03 ppm in its 1987 test report. When Lilly queried a reputable laboratory about the current expected Method 26A detection limit, assuming typical sample volumes and quality practices, the answer was approximately 0.6 ppm. This is over 20 times higher than that reported in 1987. This is likely because of the application of improved quality practices in sampling and analytical methods that lead to more defensible results.

At a minimum, Lilly suggests that the Agency review the database for unachievable low values and raise these values to those currently achievable and defensible. For the Agency's convenience, Lilly is providing values below that it understands represent quality results for typical application of the current S&A procedures. Lilly believes that the Agency should not be using unachievable and/or indefensible results (compared to current field and laboratory practices) in the computations for developing the replacement HWC MACT standards.

Parameter	Method	Reliable	Reporting

	DL ug/dscm	DL ug/dscm	Limit ug/dscm
HCl (Method 26A)	300	800	800
Cl2 (Method 26A)	100	400	400
Mercury (Method 29)	0.8	2	3
SVM (Method 29)	0.3	0.7	2
LVM (Method 29)	0.7	2	3

Regarding PM results in the database, Lilly questions whether some of the very low results are accurate and defensible, because they were obtained using standard Method 5. The Agency developed Method 5i to improve the accuracy and precision of results for sources with low (below 0.02gr/dscf) PM concentrations. Some values in the database that were generated years before the availability of Method 5i are an order of magnitude or more below 0.02 gr/dscf.

As the Agency is aware, Lilly has extensive experience in the application of Method 5 and Method 5i as a consequence of our extensive PM CEMS work. The Agency presumably has access to relevant information on the accuracy and precision of both methods from its Method 5i development program. In Section 2.3 of Method 5i, EPA states that the practical quantitation limit is 3 mg of PM. This equates to approximately 0.002 grains/dscf for a typical sample volume. In our experience, it takes extraordinary attention to the details of performing the method and analyzing the sample to obtain accurate results at this emission level. Lilly suggests that 0.005 grains/dscf is a more reasonable level to expect accurate results during routine field compliance testing. Presumably, the emission level at which Method 5 could be considered accurate is even higher.

At a minimum, Lilly suggests that reported PM data in the database in the range of 0.01 grains/dscf and below be viewed as suspect with probable large error bars around the result. Again, Lilly believes that the Agency should not be using unachievable and/or indefensible results (compared to current field and laboratory practices) in the computations for developing the replacement HWC MACT standards.

<u>Method precision will be considered when MACT standards are developed. MACT standards will not be set below levels which are not consistently or accurately achievable using established (and required) sampling methods.</u>

<u>Specifically regarding Method 5 PM levels, values as reported in the CoC and trial burn reports will continue to be shown in the HWC database. EPA agrees that very low PM levels from Method 5 need to be viewed with caution due to acknowledged sampling issues at low PM levels. However, reported Method 5 PM emissions levels will be not capped (adjusted up) to a minimum level as recommended. Instead, as mentioned above, MACT PM standards will be set consistent with the accuracy and precision of Method 5i.</u>

7. Use of One-half the Method Detection Limit in Feed Samples for

Estimating Concentrations

Lilly believes that the Agency's assumption of one-half of a non-detect value in a feed stream is inappropriate for the computations being performed. A Method Detection Limit (MDL) is a statistically derived value that is matrix independent. It only infers an assurance that the analyte will be detected. It does not imply any knowledge of the accuracy of the quantitation at the MDL level. Therefore, it seems illogical to take a value of indeterminate accuracy and divide it by two and then use it to calculate an SRE to several significant figures.

The database summaries do not include designators identifying which feed stream values are based on non-detect levels. While the purpose of the SRE computation in the data summaries is unclear, Lilly suggests that SREs only be calculated where both the feedstream data and stack emission data are above the reporting limits, and are therefore of definable quality.

> <u>Individual data source sheets show in specific detail the detection status of all individual feedstreams. In the revised HWC data base, non-detects in feedstreams are handled at the full detection limit; with the exception of the calculation of SREs, where non-detect feedrates are considered as zero (0), as discussed in detail in the proposed Replacement HWC MACT Rule background documents and preamble.</u>

8. The Computation for Condition Average ND Percent Should Be Corrected

In the data summary tables, the computations for ND percent next to the condition average result are incorrect. See for example the SVM data summary, condition 327C2, which should be 10 percent instead of 18 percent.

> <u>In some cases, as identified by the commenter, non-detect percentages for metals group test condition averages were incorrectly calculated in the data summary sheets. These have been corrected in the revised HWC data base.</u>

Lilly appreciates the opportunity to comment on this NODA. Please feel free to contact me at (317)-277-1094 if there are any questions.

Sincerely,

For Eli Lilly and Company

Michael L. Foster
Associate Engineering Consultant
Environmental Affairs
Eli Lilly and Company.

Attachments:
- TO3.xls
- TO4.xls
- T49.xls
- TO3 Trial Burn Report

bcc: Ron Pitzer
Betsy Dusold

Comment ID No. 17 and 18– Lilly and Company

Comment Summary – Contained a new test report, and Excel files with the new test report data.

Comment Response – Added test report as requested to the data base.

Comment ID No. 17 and 18 – Eli Lilly and Company

New test report and Excel files with new test report data. Not included here.

Comment ID No. 19 – DSM Pharmaceutical, Inc.

Comment Summary – Provided comments on the data for Unit ID No. 708. Also concerned that the HWC database does not include data from incinerators without air pollution control devices, for example three (3) incinerators at the DSM Greenville NC site for which no test report data has been included.

Comment Response – Most of the changes to the database were made as requested. EPA did not intentionally exclude any currently operating hazardous waste combustors from the data base, regardless of whether they are equipped with air pollution control devices. In fact, EPA spent a great deal of effort to collect the most recent available information from all currently operating hazardous waste incinerators. EPA was not able to obtain copies of the trial burn reports for the three DSM incinerators that do not have air pollution control devices from the State of NC or EPA Region 4 offices in sufficient time before the NODA release; thus they were not included. EPA is surprised that the test reports were not included as part of the commenters submission, as this data gathering was part of the intention of the NODA (i.e., to get a complete and accurate database of HWC operations). EPA was able to obtain copies of the test reports from the three DSM Greenville NC units, and has incorporated them into the HWC MACT data base.

Comment ID No. 19 – DSM Pharmaceuticals Inc.

DSM Pharmaceuticals, Inc.
Phase I HWC MACT
NODA Comments

General Comment

Comment 1

DSM Pharmaceuticals, Inc. (hereafter, DSM) owns and operates four (4) RCRA permitted hazardous waste incinerators at its facility in Greenville, North Carolina. These four (4) incinerators are referred to as the McGill I, McGill II, NAO, and Prenco incinerators. Trial Burns were conducted on each of these incinerators with the McGill I being tested in 1987, the McGill II in 1992, and the NAO and Prenco in 1989. The McGill II incinerator is the only unit that has any type of air pollution control device installed. The McGill II incinerator also happens to be the only device that the EPA has included in the Phase I HWC MACT Database. It is DSM's understanding that feed rate controls are acknowledged to be a type of MACT "technology" and can be used to comply with the MACT standards. Therefore, there is no requirement for the Maximum Available Control Technology to be based only on equipment. Incinerators that do not have air pollution control devices are required to comply with the MACT standards just as units that do have control devices. A review of the Pollutant Data Summary sheets reveals that there are only two incinerators included in the entire database that do not have air pollution control devices, and both of these units are only listed in the PM Summary Spreadsheet. Because DSM's three (3) uncontrolled incinerators have not been included in the database, it is suspected that there are other uncontrolled incinerators that have also been excluded from the database. Therefore, in addition to requesting that the

Trial Burn data for the McGill I, NAO, and Prenco incinerators be added to the database, DSM requests that the EPA incorporate any other uncontrolled incinerators into the Phase I HWC MACT Database.

ID No. 708, McGill II Incinerator, Individual Source Comments

Comment 1

Source Spreadsheet, Facility Name - The Facility Name was Burroughs Wellcome at the time of the testing. The facility was subsequently owned by Catalytica Pharmaceuticals, Inc., and is currently owned by DSM Pharmaceuticals, Inc.

Comment 2

Source Spreadsheet, Facility Location - 5900 NW Greenville Boulevard.

Comment 3

Source Spreadsheet, Combustor Characteristics - McGill Americans, Inc., Custom Designed, Horizontal, Forced Draft Incinerator.

Comment 4

Source Spreadsheet, Soot Blowing - There is no sootblow device installed in the McGill II incinerator. Therefore, NA should be inserted for Soot Blowing.

Comment 5

Source Spreadsheet, APCS Characteristics - Calvert Collision Scrubber with a maximum design pressure drop of 90 inches WC, vertical Packed Column Scrubber, followed by a Beltran Model 4 x 4 wet tubular electrostatic precipitator.

Comment 6

Source Spreadsheet, Hazardous Waste Description - Aqueous flammable waste (AFW) and special flammable waste (SFW) generated during the manufacturing of pharmaceuticals and other health products.

Comment 7

Source Spreadsheet, Supplemental Fuel - Natural gas.

Comment 8

Source Spreadsheet, Stack Height - The stack height for McGill II is 50 feet instead of 15.0 feet.

Comment 9

Source Spreadsheet, Gas Velocity - Approximately 40 ft/sec.

Comment 10

Condition Spreadsheet, Test Condition 708C1, Condition Description – Trial Burn, minimum temperature, maximum feed rate.

Comment 11
Condition Spreadsheet, Test Condition 708C2, Condition Description – Trial Burn, minimum temperature, maximum feed rate.

Comment 12
Condition Spreadsheet, Test Condition 708C3, Condition Description – Trial Burn, minimum temperature, maximum feed rate.

Comment 13
Condition Spreadsheet, Test Condition 708C3, Test Dates – Should be 11/20/92 instead of 11/19/92.

Comment 14
Emissions2 Spreadsheet, Test Condition 708C1, PM Emissions – The PM emissions should be 0.0258, 0.0225, 0.0287, and 0.0257 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 15
Emissions2 Spreadsheet, Test Condition 708C1, CO Emissions – The CO emissions should be <1.49, <1.51, <1.53, and <1.51 ppmv at 7% O_2 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 16
Emissions2 Spreadsheet, Test Condition 708C2, PM Emissions – The PM emissions should be 0.0823, 0.0535, 0.0332, and 0.0563 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 17
Emissions2 Spreadsheet, Test Condition 708C2, CO Emissions – The CO emissions should be 5.38, 3.90, <1.58, and 3.62 ppmv at 7% O_2 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 18
Emissions2 Spreadsheet, Test Condition 708C3, PM Emissions – The PM emissions should be 0.0177, 0.0127, 0.0121, and 0.0142 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 19
Emissions2 Spreadsheet, Test Condition 708C3, CO Emissions – The CO emissions should be 4.01, 21.7, 20.0, and 15.24 ppmv at 7% O_2 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 20
Feed2 Spreadsheet, Test Condition 708C1, Feedrates – The Waste Feed A feedrates were approximately 595, 596, and 603 lb/hr for Run 1, Run 2, and Run 3, respectively. The Waste

Feed B feedrates were approximately 204, 205, and 206 lb/hr for Run 1, Run 2, and Run 3, respectively. The Total Waste Feedrates for Run 1, Run 2, and Run 3 were approximately 799, 801, and 809 lb/hr, respectively.

Comment 21
Feed2 Spreadsheet, Test Condition 708C1, MTEC Feedrates – The MTEC Feedrates for Ash and Mercury were not calculated. The Chlorine MTEC Feedrates for Organic Liquid A should have been calculated using one-half the detection limit.

Comment 22
Feed2 Spreadsheet, Test Condition 708C2, Feedrates – The Waste Feed A feedrates were approximately 608, 603, and 608 lb/hr for Run 1, Run 2, and Run 3, respectively. The Waste Feed B feedrates were approximately 203, 204, and 205 lb/hr for Run 1, Run 2, and Run 3, respectively. The Total Waste Feedrates for Run 1, Run 2, and Run 3 were approximately 811, 807, and 813 lb/hr, respectively.

Comment 23
Feed2 Spreadsheet, Test Condition 708C2, Mercury – The Mercury feed stream concentrations (ppmw) are all non-detectable quantities.

Comment 24
Feed2 Spreadsheet, Test Condition 708C2, Metal Concentrations – The total metal concentrations in the waste feed are presented as follows:

Metal	Run 1	Run 2	Run 3
Antimony (ug/g)	< 0.100	< 0.100	< 0.100
Arsenic (ug/g)	< 0.100	< 0.100	< 0.100
Barium (ug/g)	< 0.100	< 0.100	< 0.100
Beryllium (ug/g)	< 0.050	< 0.050	< 0.050
Cadmium (ug/g)	< 0.100	< 0.100	< 0.100
Chromium (ug/g)	0.434	0.513	0.543
Lead (ug/g)	< 0.100	< 0.100	< 0.100
Silver (ug/g)	< 0.100	< 0.100	< 0.100
Thallium (ug/g)	< 0.100	< 0.100	< 0.100

Comment 25
Feed2 Spreadsheet, Test Condition 708C2, MTEC Feedrates – The MTEC Feedrates for Ash and Mercury were not calculated. The Chlorine MTEC Feedrates for Organic Liquid A should have been calculated using one-half the detection limit.

Comment 26
Feed2 Spreadsheet, Test Condition 708C3, Feedrates – The Waste Feed A feedrates were approximately 650, 636, and 637 lb/hr for Run 1, Run 2, and Run 3, respectively. The Waste Feed B feedrates were approximately 203, 204, and 206 lb/hr for Run 1, Run 2, and Run 3,

respectively. The Total Waste Feedrates for Run 1, Run 2, and Run 3 were approximately 853, 840, and 843 lb/hr, respectively.

Comment 27
Feed2 Spreadsheet, Test Condition 708C3, Mercury – The Mercury feed stream concentrations (ppmw) are all non-detectable quantities.

Comment 28
Feed2 Spreadsheet, Test Condition 708C3, Metal Concentrations – The total metal concentrations in the waste feed are presented as follows:

Metal	Run 1	Run 2	Run 3
Antimony (ug/g)	0.200	0.226	0.213
Arsenic (ug/g)	< 0.100	< 0.100	< 0.100
Barium (ug/g)	< 0.100	< 0.100	< 0.100
Beryllium (ug/g)	< 0.050	< 0.050	< 0.050
Cadmium (ug/g)	< 0.100	< 0.100	< 0.100
Chromium (ug/g)	0.335	0.332	0.319
Lead (ug/g)	< 0.100	< 0.100	< 0.100
Silver (ug/g)	< 0.100	< 0.100	< 0.100
Thallium (ug/g)	< 0.100	< 0.100	< 0.100

Comment 29
Feed2 Spreadsheet, Test Condition 708C3, MTEC Feedrates – The MTEC Feedrates for Ash and Mercury were not calculated. The Chlorine MTEC Feedrates for Organic Liquid A should have been calculated using one-half the detection limit.

ID No. 708, McGill II Incinerator, Pollutant Data Summary Comments

Comment 1
Chlorine Summary Spreadsheet - The Chlorine Feedrate Condition Average values were calculated using the full detection limit for Waste Feed A (Organic Liquid A) and should have been calculated using one-half the detection limit for Test Conditions 708C1, 708C2, and 708C3.

Comment 2
Chlorine Summary Spreadsheet - The Chlorine Feedrate MTEC Total By Run values were calculated using the full detection limit for Waste Feed A (Organic Liquid A) and should have been calculated using one-half the detection limit for Test Conditions 708C1, 708C2, and 708C3.

Comment 3
PM Summary Spreadsheet – The PM Stack Gas Emission values are incorrect. For Test Condition 708C1, the PM emissions should be 0.0258, 0.0225, 0.0287, and 0.0257 for Run 1, Run 2, Run 3, and Condition Average, respectively. For Test Condition 708C2, the PM

emissions should be 0.0823, 0.0535, 0.0332, and 0.0563 for Run 1, Run 2, Run 3, and Condition Average, respectively. For Test Condition 708C3, the PM emissions should be 0.0177, 0.0127, 0.0121, and 0.0142 for Run 1, Run 2, Run 3, and Condition Average, respectively.

<u>Comment 4</u>
LVM, SVM, and Mercury Summary Sheets – It was noted that Test Conditions 708C1, 708C2, and 708C3 were not included on the LVM, SVM, and Mercury Summary Sheets. Data is available to determine the feed rate of these metals for each Test Condition. However, emission rate data was not obtained for these metals, because the Adjusted Tier I methodology was used to demonstrate compliance and establish the metal feed rate limits. Although this incinerator has an air pollution control train, the Adjusted Tier I methodology conservatively assumes that the metal feed rates equate to the emission rates. It is recommended that the EPA add the metal feed rate information into the Phase I database for use in establishing the MACT standards.

> <u>Metals feedrate data are included in the database. Test conditions are not included in the Data Summary Sheets if stack gas emissions measurements were not taken. The Tier I status for metals is included in the information. Tier I federate levels are not used to determine MACT standards, as discussed below and in much greater detail in the proposed Replacement HWC MACT Rule background documents and preamble.</u>

Comment ID No. 20 – Glaxo Smith Kline

Comment Summary – Provided comments on data for Glaxo Smith Kline incinerator ID No. 341.

Comment Response – Made changes as requested.

Comment ID No. 20 – Glaxo Smith Kline

GlaxoSmithKline
Phase I HWC MACT
NODA Comments

ID No. 341, ESF Incinerator, Individual Source Comments

Comment 1
Source Spreadsheet, Facility Name – The Facility Name is now GlaxoSmithKline.

Comment 2
Source Spreadsheet, Facility Location – The Facility Location is 5 Moore Drive.

Comment 3
Source Spreadsheet, Unit ID Name/No. – The unit is more accurately referred to as the Environmental Safety Facility (ESF) Incinerator.

Comment 4
Source Spreadsheet, Other Sister Facilities – None.

Comment 5
Source Spreadsheet, Combustor Characteristics – The unit has a solid waste "ram" feeder. The primary chamber has dimensions of 6'5" diameter by 16'5" length. The secondary chamber has dimensions of 6'5" diameter by 14'3.5" length.

Comment 6
Source Spreadsheet, Soot Blowing – NA.

Comment 7
Source Spreadsheet, APCS – The APCS is more accurately described as dry lime injection (dry scrubber) followed by a heat exchanger followed by a fabric filter. Therefore, the APCS should be described as DS/HE/FF.

Comment 8
Source Spreadsheet, APCS Characterization – The APCS Characterization should be reordered to reflect the arrangement of the system as DS/HE/FF.

Comment 9

Source Spreadsheet, Stack Characteristics, Height – The stated value, 439 feet, is the top of stack elevation above mean sea level (MSL). The actual height of the stack is 99 feet.

Comment 10
Source Spreadsheet, Permitting Status – The facility is Tier III for arsenic, cadmium, and chromium. The facility is not Tier III for CO.

Comment 11
Emissions1 Spreadsheet, Test Condition 341C10 – The Hexavalent Chromium emission rate for Run 3 should be 0.0025 g/hr instead of 0.0028 g/hr.

Comment 12
Emissions1 Spreadsheet, Test Condition 341C11 – The CO (RA) values should be 6.4, 6.6, 4.7, and 5.9 for Run 1, Run 2, Run 3, and Condition Average, respectively.

Comment 13
Emissions1 Spreadsheet, Test Condition 341C11 – The Carbon Tetrachloride DRE for Run 3 should be 99.99895 instead of 99.99869.

Comment 14
Emissions1 Spreadsheet, Test Condition 341C12 – The Metals Sampling Train Moisture for Run 3 should be 10.4 instead of 10.5.

Comment 15
Emissions1 Spreadsheet, Test Condition 341C12 – The Metal Emission Rates (except hexavalent chromium) with units of ug/dscm were calculated using the stack gas flow rate and oxygen content from the PM/HCl/Cl_2 sample train. These emission rates should be calculated using the metals sampling train stack gas flow rate and oxygen content values.

Comment 16
Emissions1 Spreadsheet, Test Condition 341C12 – The LVM values with units of ug/dscm for Run 1, Run 2, and Run 3 are not calculated correctly using one-half the detection limit.

Comment 17
Feed1 Spreadsheet, Test Condition 341C10 – The Waste Feed LVM value for Run 1 is not calculated correctly using one-half the detection limit.

Comment 18
Feed1 Spreadsheet, Test Condition 341C12 – The Feedstream Description Feedrate Totals for Run 1, Run 2, Run 3, and Condition Average are not calculated correctly. For Run 1, column L is referenced in the summation equation when column N should be referenced. This error is carried through to the Run 2, Run 3, and Condition Average equations. This same error is carried through to the Ash and Chlorine totals. This error is also carried through to the MTEC LVM and SVM totals.

Comment 19
Feed1 Spreadsheet, Test Condition 341C12 – The Lead Feedrate value in lb/hr for the Bedding during Run 1, Run 2, and Run 3 should be 2.48E-04, 2.74E-04, 2.57E-04, respectively.

Comment 20
Process1 Spreadsheet, Test Condition 341C10 – The SCC Temperature for Run 1 should be 2028.5 instead of 2027.5. The Lime Injection Rate values for Run 2 and Run 3 should be 80.2 and 79.1, respectively. The Combustion Gas Velocity values for Run 1, Run 2, and Run 3 should be 40.52, 39.93, and 42.02, respectively.

Comment 21
Process1 Spreadsheet, Test Condition 341C11 – The Combustion Gas Velocity values for Run 1, Run 2, and Run 3 should be 34.85, 35.54, and 37.93, respectively.

Comment 22
Process1 Spreadsheet, Test Condition 341C12 – The Combustion Gas Velocity values for Run 1, Run 2, and Run 3 should be 36.97, 34.53, and 34.64, respectively.

Comment 23
Process1 Spreadsheet, Test Condition 341C13 – The Combustion Gas Velocity values for Run 1, Run 2, and Run 3 should be 28.65, 27.43, and 24.70, respectively.

Comment 24
Summary2 Spreadsheet – The Condition ID numbers are incorrect and should be 341C10, 341C11, 341C12, and 341C13.

ID No. 341, ESF Incinerator, Pollutant Summary Sheet Comments

Comment 1
GlaxoSmithKline has provided detailed comments for each Test Condition, above. The following comments assume that database changes based on those comments will be incorporated into the Pollutant Summary Spreadsheets. Therefore, comments have not been included in this document related to items that GlaxoSmithKline has already provided comment (e.g., emission rates, feed rates, etc.).

Comment 2
The ESF Incinerator air pollution control system has been characterized as consisting of dry lime injection followed by a heat exchanger followed by a fabric filter. The APCS description in each of the Pollutant Summary Sheets should reflect this characterization as DS/HE/FF.

Comment ID No. 21 – ATO Fina Petrochemicals

Comment Summary – Commenter notes that ATO Fina boiler ID No. 811 is currently operated under the Comparable Fuels rule for its main waste feed, and is under the Low Risk Waste Exemption for the other hazardous waste it burns. Recommends that this unit should not be included when determining the HWC MACT standards.

Comment Response – This information will be taken into consideration when determining what data to use when determining HWC MACT standards.

Comment ID No. 21 – ATO Fina Petrochemicals

RCRA Information Center (RIC)
Office of Solid Waste (5305G)
U.S. Environmental Protection Agency Headquarters (EPA HQ)
Ariel Rios Building
1200 Pennsylvania Avenue, NW.
Washington, DC 20460-0002

Re: Docket Number RCRA-2002-0019
NODA – NESHAP: Standards for Hazardous Air
Pollutants for Hazardous Waste Combustors (Final
Replacement Standards and Phase II)

Comments
ATOFINA Petrochemicals, Inc. – La Porte Plant
EPA ID: TXD086981172
EPA Database No. 811
(formerly Fina Oil and Chemical Company – La Porte Plant)

ATOFINA Petrochemicals, Inc. appreciates the opportunity to make the following comments.

A review of the EPA database indicates that the information contained for the 1998 RCOC testing is basically correct. However, there is some important information to consider that has occurred since 1998 affecting the La Porte Plant combustion units listed in the EPA database.

ATOFINA's La Porte Plant manufactures only polypropylene plastic and a by-product called Amorphous Polymer Solution (APS) which is burned, as the main liquid fuel, in the listed units. On September 27, 2001, the APS qualified as a Comparable Fuel prusuant to 40 CFR Section 261.38 and this was confirmed by the Texas Natural Resource Conservation Commission (TNRCC) on March 5, 2002. On April 8, 2002, the TNRCC confirmed that APS is a "primary fuel" as defined in 40 CFR Section 266.109. Under the Boiler and Industrial Furnace (BIF) rules, the one hazardous stream burned (<20% of the time)at these listed units qualifies for the Low Risk Waste Exemption (LRWE).

The 1998 RCOC test was conducted at worst case conditions to prove and establish Automatic Waste Feed Cutoff (AWFCO)limits. During the 1998 RCOC test, spiking of chlorine and particulate matter was conducted.

There is no information contained in the EPA database reflecting routine operation of the listed units. ATOFINA agrees that knowing what to expect during a worst case situation is valuable information but the daily operation norm is important missing information that would be useful for the “More Likely Case” emissions evaluation. Virtually all RCRA stack tests are conducted at maximum rates or worst case situations leaving what ATOFINA considers an important gap in data for normal daily operational emissions.

Considering that the main liquid stream burned by ATOFINA – La Porte Plant is a Comparable Fuel. And the one hazardous waste stream burned qualifies for the BIF Low Risk Waste Exemption, it is believed that EPA should consider excluding the La Porte Plant data before establishing Final Replacement Standards and Phase II.

Thank you for considering our comments.

Sincerely,

Ron Copeland
Environmental Coordinator
281 476 3762

Comment ID No. 22 – Bostick Findley, Inc.

Comment Summary – The commenter wonders why the HWC boiler operated by Bostick Findley in Middleton MA is not included in the data base.

Comment Response – EPA was not able to obtain a copy of the Bostick Findley test report in sufficient time to add it to the NODA database. EPA is surprised that a copy of the test report was not included in the commenters submission. EPA OSW has obtained a copy of the test report from EPA Region 1, and has added it to the HWC database.

Comment ID No. 22 – Bostick Findley, Inc.

USEPA

Subject: Docket ID RCRA-2002-0019

The NODA that you are requesting comments does not include BostikFindleys HWC unit that is Located in Middleton Massachusetts. BostikFindleys HWC unit is and industrial boiler that is operating under interim status since the implementation of the BIF regulation to the present. We have conducted several recertification tests and submitted them to USEPA region 1. Our EPA ID # is MAD00103767.

I would like to have our facility included in the NODA to ensure that it is considering all parties affected by the database.

James Harlow
EHS Specialist
BostikFindley Inc.
211 Boston Street
Middleton Ma, 01949
978-750-7466
jim.harlow@bostikfindley-us.com

Comment ID No. 23 and 24 – BASF Coporation

Comment Summary – The commenter is concerned about the data base inaccuracies, but has not yet been able to provide any specific problems.

Comment Response – Data base changes will be made as requested. However, no specific issues or comments have been received. Note that the commenter will have a further opportunity to comment on the accuracy of the data base as part of the proposed Replacement HWC MACT Rule.

Comment ID No. 23 and 24 (identical) – BASF Corporation

Sent By Electronic Mail Only

August 16, 2002

RCRA Docket Information Center
U.S. Environmental Protection Agency Headquarters (EPA HQ)
Office of Solid Waste
Ariel Rios Building (5305G)
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0002

Re: RCRA Docket Number RCRA-2002-0019
"NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (NODA)"

Dear Sir or Madam:

BASF Corporation is submitting these comments on NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (NODA) noticed in the July 2, 2002 Federal Register (67 FR 44452). These comments apply to Docket Number RCRA-2002-0019.

At this point BASF Corporation has not completely reviewed the data that pertains to us within this NODA. We are currently in the process of reviewing data recorded for ten of the combustion units in the database. These ten units and their test reports are located at four separate sites in three different states. An initial cursory review of the data has indicated some inaccuracies for at least one unit's emissions. The 45 days EPA has allowed for comment on this data was not sufficient to complete our review. We intend to continue our review efforts and submit any corrections by October 1st, 2002.

If you have any questions about our comments, please contact Mark Allen at (979) 415-8387.

Sincerely,

Mark S. Allen
BASF Corporate Air Team Member

<u>Comment ID No. 25 – NutraSweet Company</u>

<u>Comment Summary</u> – Provided brief comments on accuracy of the data for boiler ID Nos. 776 and 777. Also, requests an extension to review further.

<u>Comment Response</u> – Changes made as requested. No further changes have been received. Note that, as mentioned above, the commenter will have a further opportunity to comment on the accuracy of the data base as part of the proposed Replacement HWC MACT Rule.

<u>Comment ID No. 25 – NutraSweet Company</u>

August 15, 2002

RCRA Information Center
Office of Solid Waste (5305G)
U. S. Environmental Protection
Agency Headquarters (EPA HQ)
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0002

Re: Docket # RCRA-2002-0019
Phase II ID Nos. 776 and 777
EPA ID No.: GAD981237118
Facility Name: The NutraSweet Company

Dear Sir or Madam:

The NutraSweet Company of Augusta, Georgia (formerly Monsanto) is submitting the following revisions to 1997 database report the data previously submitted.

1. The facility has change owners/operator so please update the database for Phase II ID Numbers 776 and 777 to **The NutraSweet Company, 1762 Lovers Lane, Augusta, GA 30901.**
2. Heat input rate for the IDs # 776 and 777 is 66 MMBTU/hr and 26 MMBTU/hr respectively.

Based on a review of the June 1997 Certification of Compliance test report there are minor transcription discrepancies in the tables and spreadsheets as compared to test report data. I would like to request a 30-day extension for the opportunity to review in further details and provide the necessary corrections. Thank you for opportunity to comment on the above NODA.

Respectfully submitted,

Irma C. Riddick
Director, ES&H

Comment ID No. 26 – Environmental Technology Countil

Comment Summary – Provided comments on the contents of the data base for the ETC member HWCs. Many of these comments were included in revised Excel data files; these are not included in this document. Commenter agreed with decision to not include MACT standards for HW burning sulfur recovery furnaces. Commenter also provided various comments on the general database and data handling issues.

Comment Response – Made most of the specific database changes as requested. Responses to general issues are included below in blue underline text after each specific issue.

Comment ID No. 26 – Environmental Technology Council

Environmental Technology Council
734 15th Street, N.W. • Suite 720 • Washington, DC 20005 • (202) 783-0870

Filed electronically: www.epa.gov/edocket
Hard copy filed by U.S. mail

August 21, 2002

RCRA Information Center
Office of Solid Waste (5305G)
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Docket No. RCRA-2002-0019

To the Docket:

The Environmental Technology Council (ETC) submits these comments on the Notice of Data Availability (NODA) for the NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) published in the Federal Register on July 2, 2002. 67 Fed. Reg. 44452.

STATEMENT OF INTEREST

The ETC is a national trade association of companies engaged in the treatment, recycling, and disposal of industrial and hazardous wastes, the cleanup of contaminated properties, and related equipment manufacturing. ETC firms operate permitted facilities for commercial waste management and provide technologies and services to customers throughout the U.S. and Canada. A number of ETC member companies own and operate hazardous waste incinerators and lightweight aggregate kilns, and other ETC members collect and provide hazardous waste fuels to cement kilns, and these firms will be directly affected by this rulemaking.

The ETC has reviewed the databases for incinerators, cement kilns, and lightweight aggregate kilns for accuracy and completeness, and we have provided corrections and additions where appropriate in these comments. 67 FR 44,456 col. 1. When the NODA was published, EPA provided us with the spreadsheet versions of the individual source data in Microsoft Excel format on a CD-ROM, and we appreciate this courtesy. We were able to conduct a more complete and useful review as a result.

These comments are divided into two parts. Part I sets forth comments on ETC member facilities. For each source, we refer in these comments to the identification number for the spreadsheet data file and have included a CD-ROM with corrected and updated spreadsheets as appropriate. Part II presents our concerns and suggestions on the databases in general.

PART I – COMMENTS ON ETC MEMBER FACILITIES

327 Safety-Kleen (Aptus), Aragonite, Utah

EPA did not use the correct report for the 1992 trial burn for the Safety-Kleen (formerly Aptus) incinerator in Aragonite, Utah. A trial burn report was issued in 1992, but it was then revised and reissued in March 1993. EPA mistakenly used the 1992 report, rather than the revised 1993 report. As a result, the dioxin/furan test report data for the Aragonite incinerator are different from the data in EPA's database.

Copies of the correct tables for the PCDD/PCDF Stack Concentrations from the revised March 1993 trial burn report are attached to these comments, and are included on the ETC's CD-ROM as "327 SK Aragonite DF Tables.doc." We did not attempt to change the EPA spreadsheet to replace the incorrect dioxin data with the emissions data from these tables.

A revised spreadsheet labeled "327 SK Aragonite Corrected.xls" with comments that correct other errors and provide missing information is also included on the CD-ROM. The "Track Changes" feature in Microsoft Excel was used to put a red mark in the upper right corner of cells that were changed, so that the corrected or additional information can be easily identified on the revised spreadsheet.

201, 488, 489, and 609 Safety-Kleen (Rollins) Deer Park, Texas

The followed revised spreadsheets are included on the CD-ROM enclosed with these comments:

201 SK Deer Park Corrected.xls
488 SK Deer Park Corrected.xls
489 SK Deer Park Corrected.xls
609 SK Deer Park Corrected.xls

These spreadsheets correct errors and provide missing information regarding the Safety-Kleen (formerly Rollins) incinerator in Deer Park, Texas. The corrected or additional data are highlighted in red on the revised spreadsheets.

<u>331 Ross Incineration Services, Grafton, Ohio</u>

A revised spreadsheet labeled "331 Ross Corrected.xls" with minor corrections to the EPA spreadsheet is included on the ETC CD-ROM. The changes are highlighted in yellow.

<u>3000 Reynolds Aluminum, Gum Springs, Arkansas</u>

The EPA spreadsheet for the Gum Springs incinerator did not provide classifications for the data. Therefore, we provide the following commentary on the worksheets in the Excel database spreadsheet for this facility.

General

The data should be classified as follows:

1. 3000C1 should be considered 'worst case' for metals emissions due to metals spiking and elevated kiln temperatures.

2. 300C2 should be considered 'worst case' for organics removal and destruction due to minimization of kiln and afterburner temperatures. It should also be considered 'worst case' for PM and HCL due to the 2 kiln operation.

3. Due to problems with the baghouse inlet temperature measurements, and the different kiln operating conditions during the test, it is difficult to quantify either test condition as 'worst case' for D/F.

Source Worksheet

Cell C16 and C17 - This facility is somewhat unique in that its APC train includes an afterburner system in addition to the units listed. In effect, the kilns serve to 'desorb' the hazardous constituents from the waste rather than totally destroy them, with actual destruction taking place in the afterburners. Therefore, please include the afterburner system in the APC train descriptions. It is downstream of the fabric filters, is fueled by natural gas, and operates in the range of 1750-1800 degrees F with an approximate 2 second gas residence time.

Condition Worksheet

No comments

· *Cells F28, H28, and J28* – 'nd' is needed in these cells to reflect non-detect concentrations of nickel in test condition #1.

· *Cells F29, H29, and J29* – 'nd' is needed in these cells to reflect non-detect concentrations of selenium in test condition #1.

· *Cells F32, H32, and J32* – 'nd' is needed in these cells to reflect non-detect concentrations of zinc in test condition #1.

· *Cell I70* – For HCL emissions in run #2 of test condition #2, the value should be 0.0364 lb/hr, current value reflects 0.0346 lb/hr.

· *Cells F78, H78, and J78* – 'nd' is needed in these cells to reflect non-detect concentrations of antimony in test condition #2.

· *Cell J79* – 'nd' is needed in these cells to reflect non-detect concentrations of aluminum in test condition #2.

· *Cells F81, H81, and J81* – 'nd' is needed in these cells to reflect non-detect concentrations of barium in test condition #2.

· *Cells F84, H84, and J84* – 'nd' is needed in these cells to reflect non-detect concentrations of copper in test condition #2.

· *Cells F87 and H87* – 'nd' needed in these cells to reflect non-detect concentrations of mercury in test condition #2, runs #1 and #2.

· *Cells F88, H88, and J88* – 'nd' needed in these cells to reflect non-detect concentrations of nickel in test condition #2.

· *Cells F89, H89, and J89* – 'nd' needed in these cells to reflect non-detect concentrations of selenium in test condition #2.

· *Cells F92, H92, and J92* – 'nd' needed in these cells to reflect non-detect concentrations of zinc in test condition #2

· *Rows 95, 96, 97, and 98* – data on stack gas flow, oxygen, moisture, and temperature were all selected from sampling train #2 information. It is unclear why sampling train #2 was selected as it is not worst, best, or average in any or all cases.

Feed Worksheet

· *Cell F9* – fluoride feed value for test condition #1, run #1 should be 2160 lb/hour, not 21600 as currently exists in cell F9.

· *Cell J53* – ash feed rate value for test condition #2, run #3 should be 96,000 lb/hour, not 9600 as currently exists in cell J53.

· *Cell I66* – this cell should have the 'nd' removed as there was a recorded value for the silver concentration in the potliner feed for test condition #2, run#3.

Process Worksheet

Rows 8 and 18 – As noted above, the baghouse inlet temperature values recorded during the trial burn should be considered extremely suspect and not relied on as representative of an operating condition of the unit(s), as difficulties with the temperature sensing equipment at this location were encountered during the trial burn test.

Dioxin/Furan Condition #1 Worksheet

No comments.

Dioxin Furan Condition #2 Worksheet

No comments.

Source Description Summary (summ 1)Worksheet

No comments.

Emissions and Feedrate Data Summary (summ 2)
Worksheet

No comments.

Copies of the relevant pages from the trial burn reports for the Gum Springs incinerator that support this information are provided on the CD-ROM in the following PDF documents:

M0350436022237871700.pdf
M0350439022237888600.pdf
M0540423022237919000.pdf
M0540444022237902400.pdf

<u>Sulfur Recovery Furnaces</u>

ETC agrees with the Agency's decision not to propose MACT standards for hazardous waste burning sulfur recovery furnaces. 67 FR 44455 col. 2. These facilities, which are currently regulated under the RCRA BIF rules when burning hazardous wastes, have very low emissions. The database supports EPA's conclusion that these facilities do not have emissions of hazardous air pollutants at levels that would warrant MACT standards.

PART II – GENERAL COMMENTS ON EPA'S DATABASES

The ETC has reviewed the databases for all hazardous waste incinerators, cement kilns, and lightweight aggregate kilns, and has the following comments.

Consistency of Data Qualifiers

The data qualifiers do not appear to be universally consistent in their application. Some inconsistencies in the SVM data for incinerators are pointed out below. These examples may reveal corrections needed to the qualifiers for the SVM data, but the ETC also raises this question as a general point for EPA to ensure that qualifiers are correctly and consistently applied to the database for all HAPs and all combustor categories. EPA should re-evaluate the entire database and consider similar issues with other categories and HAPs.

1. Source 3010 has four test conditions for SVM that are all described as annual performance tests. The two most recent tests (2000 and 1997) are given an "N" qualifier. The other two older tests (1996 and 1994) are given "WC" qualifiers. The 1996 test condition given a WC label is a result of 6.1 μg/dscm, and is lower than the two more recent test conditions that are given "N" qualifiers. It would appear that either all test conditions should be "N's" or that the two more recent tests should be given WC qualifiers.

   <u>No changes are made. EPA agrees that data conducted under normal operating conditions should not be identified as worst case (WC) even though the normal data may be higher than that under supposed worst case conditions (both taken under the same test campaign). That is to say, all data under conditions determined/intended to be normal are identified as normal. All data under worst case conditions are classified as either worst case or "inbetween" depending on the emission level. However, data taken under normal test conditions will not be assigned WC even if they happen to be higher than WC test conditions taken in the present, past, or future. Alternately, data taken under worst case conditions will not be classified as normal even though it may be lower than that of other normal test conditions.</u>

2. WC data is defined in the background document as Trial Burn (TB) data. Yet Source number 3008 has a single test condition, which is a trial burn but is labeled "IB." There is no WC test condition for this source for this 2000 test. It would seem that this test condition should be labeled WC or N. The same applies to the RB condition for this source.

> "Inbetweens" (IB's) are assigned for a metals group (such as SVM) when one of the metals is worst case (e.g., Pb is Tier III) but one or more of the other in the grouping is normal (e.g., Cd in Tier I). Thus, it is possible to have a condition with an IB rating flag even though there is not another test condition during the same campaign with a WC flag.

3. Source 3021 has two test conditions for the April 1996 test, both of which are labelled as trial burn. One is low temperature, but is given a qualifier of WC. The high temperature condition is labeled IB. Yet high temperature is considered a worst-case operating scenario for SVM metals when planning compliance tests for metals. Also, the high temperature run has a higher MTEC label reflecting higher metals feed than the run labeled WC. It would seem that the high temperature and high MTEC condition is more of a worse case. In general, any test condition for a given date that has the highest MTEC and/or the highest temperature should be considered worst case.

> Compliance test conditions are assigned either IB or WC if they are used to set permit limits, and are not normal or not research or demonstration type testing. When two or more of these type of conditions (permit limiting setting conditions) are available during the same testing campaign, the test condition with the highest emission level is identified as WC, regardless of whether it might be expected to have higher emissions levels based on operating condition factors such as feedrate or temperature. During a single test "campaign" there can only be one test condition classified as worst-case – that being the permit setting test condition with the highest emission level.

4. Source 331 has a single 1993 trial burn test condition labeled "IB." This same source has a single 1992 trial burn test condition labeled "WC." The IB qualifier for the 1993 test seems inappropriate since the 1992 and 1993 tests are separate. IB should be used for a test condition from a given test for which there is also a WC test condition.

> The two trial burn tests were considered as part of the same testing campaign because they were conducted close together in time, and it was determined that the second set of testing did not "override" the permit limits set in the first testing; instead were used to set additional operating condition limits. As mentioned above, it is not possible to have 2 test conditions identified as WC during the same testing campaign.

5. Should all risk burn data be labeled as "N"? If so, source 338 has a 2000 risk burn with two test conditions labeled as WC and IB.

Not all risk burns where necessarily conducted under normal test conditions.

6. Sources 349 and 915 have trial burns that are labeled as "IB" with no test condition labeled "WC." This seems inconsistent with the definition of IB, and these runs probably should be labeled as N or WC.

See above response to issue 2.

7. Source 340 has two test conditions from a 1992 test, one labeled WC and one IB. The test condition labeled WC has a lower MTEC than the condition labeled IB. Yet higher MTEC would reflect a higher SVM feed rate, and it would seem that the higher MTEC run would be more of a worse case. The same is observed in the data for source 503 in the 1993 test.

As mentioned above, test conditions were not assigned at WC rating based solely on operating conditions. As a prerequisite, WC test conditions must have been conducted under non-normal, non-research type testing, where permit limits were being set. However, test conditions with the highest metals feedrates or highest combustion temperatures were not automatically determined to be worst case for metals. If, during the same testing campaign, there are more than one test condition where metals emissions were evaluated under permit limit setting conditions, the test condition with the highest emission was assigned WC, and the others IB, regardless what the comparative operating conditions may have suggested.

In addition, the cement kiln database for metals considers metal emission test runs as WC data. Yet many incinerators have metals emissions data collected for the same compliance purposes, but this data is classified as "N" data. Examples are sources 222, 3010 and 603. In general, EPA has used the same metals emissions and feed control strategy for incinerators under omnibus authority as is used for cement kilns under the BIF rule. Metals feed rates are limited so as to control metal emissions, based on results collected during trial burn compliance tests. Therefore, sources like 222 should have some metals test conditions labeled as WC, as is the case for most cement kiln test conditions. The cement kiln SVM database for example is mostly WC qualifiers, yet the same type of testing in the incinerator database is labeled with an N qualifier. EPA should re-evaluate the use of qualifiers for the incinerator metals emissions data.

See the proposed Replacement HWC MACT Rule for additional detailed discussions of revised procedures used to classify the test conditions. Also, note that most CK SVM test conditions where assigned WC because in almost all cases during compliance testing, Cd and Pb were both evaluated under WC, spiked, Tier III testing conditions. In constrast, for incinerators, much of the compliance stack gas SVM metals emissions test data was taken under more “normal”, Tier I, compliance operations, where metals feedrate limits were not based on compliance testing emissions results.

Evaluation of Data Outliers

Please note that the comment below is not on MACT methodology, but relates to the consistency and accuracy of the database.

The ETC has performed some preliminary MACT floor evaluations using the new 2002 database in order to identify any inconsistencies with given data points. When the best test conditions for a given HAP are arrayed, it appears that certain test condition data are outliers. One example is the cement kiln SVM data. The best performing sources selected based on the lowest WC test conditions are sources 203, 302, 200, 201, and 473. The specific test condition SVM data for all of these sources ranges from 0.7 to 87.7 μg/dscm with the exception of one data point for source 203 which is 545.7 μg/dscm. This result is for a 1993 test that is labeled as a WC. Yet there are two more recent tests that are labeled WC for 1996 and 2000, which have SVM results of 0.7 and 8.1 μg/dscm respectively. Based on this it would appear that this 545.7 μg/dscm data point should be rejected and given a different qualifier of NE or NA. Other examples of such outliers include the following:

- Source 205 - SVM: A 1992 WC test condition of 1160 μg/dscm vs. a more recent 2000 test condition result of 232 μg/dscm also labeled WC.

- Source 207 - SVM: A 1993 WC test condition of 506.9 μg/dscm vs. a more recent 2000 WC test condition result of 180.2 μg/dscm.

- Source 300 - SVM: A 1992 test condition result of 2323 μg/dscm vs. a more recent 1998 WC test condition result of 1012.8 μg/dscm.

- Source 328 - SVM: A 1992 WC test condition result of 1031.7 μg/dscm vs. a more recent 1995 test condition result of 457.6 μg/dscm.

- Source 404 - D/F: A 1995 test result of 3.289 ngTEQ/dscm and a 1992 test result of 0.975 ngTEQ/dscm vs. a more recent 1998 test condition result of 0.0696 ngTEQ/dscm.

- Source 322 - D/F: A 1992 test result of 3.722 ngTEQ/dscm vs. a more recent 1995 test condition result of 0.0689 ngTEQ/dscm.

- Source 207 - D/F: A 1999 test results of 0.66 ngTEQ/dscm vs. a more recent 2000 test condition result of 0.018 ngTEQ/dscm.

- Source 203 - D/F: A 1993 test result of 5.06 ngTEQ/dscm vs. a more recent 1996 test condition result of 0.45 ngTEQ/dscm.

· Source 206 - D/F: A 1992 test result of 1.982 ngTEQ/dscm vs. a more recent 1999 test condition result of 0.477 ngTEQ/dscm.

· Source 300 - D/F: A 1992 test result of 10.96 ngTEQ/dscm vs. a more recent 1998 test condition result of 1.39 ngTEQ/dscm.

· Source 319 - D/F: A 1992 test result of 19.69 ngTEQ/dscm vs. a more recent 1998 test condition result of 1.433 ngTEQ/dscm.

· Source 323 - D/F: A 1992 test result of 5.179 ngTEQ/dscm vs. a more recent 1995 test condition result of 0.0967 ngTEQ/dscm.

· Source 403 - D/F: A 1992 test result of 3.785 ngTEQ/dscm vs. a more recent 1997 test condition result of 0.2498 ngTEQ/dscm.

· Source 205 - PM: A 1992 WC test condition result of 0.0498 grains/dscf vs. a more recent 2000 WC test condition result of 0.018 grains/dscf.

· Source 222 - PM: A 1994 WC test condition result of 0.0016 grains/dscf vs. a more recent 2000 performance test condition result of 0.0107 grains/dscf. The more recent test condition should be labeled as WC. Note that the ETC recognizes that the more recent data is part of an annual performance test, but such tests are also done for compliance purposes and should be considered as worse case. Note that other similar performance (non-TB) tests are considered by EPA to be WC. For example, source 603 has a test called a "biannual evaluation," and EPA assigned a qualifier of WC to the highest PM result for this test. There are numerous other examples in both the incinerator and cement kiln databases. EPA should review the designations given for non-trial burn tests and use the WC qualifier for worse case runs associated with annual performance tests.

· Source 454 - PM: A 1986 WC test condition result of 0.0186 grains/dscf vs. a more recent 2000 WC test condition result of 0.0456. The older test condition should be reclassified as NA.

· Source 327 - Hg: A 1992 WC test condition result of 1396 μg/dscm vs. a more recent 2001 WC test condition result of 190.6 μg/dscm.

The above list is not exhaustive of all of the possible cases for which more recent test results exist with lower emissions for WC type test conditions. In these cases, EPA should assign a label of NE or NA for these outlier or older test data. EPA should completely re-evaluate the database to make certain that high outlier WC data, or N data, are re-labeled as NA or NE so as not to skew future MACT floor evaluations.

<u>See the proposed Replacement HWC MACT Rule background documents and preamble for detailed discussion of procedures for handling outlier data and data from different test</u>

campaigns (data taken over the span of multiple years). In particular, statistical analyses are used to determine if there is a significant trend in metals emissions data over time.

Use of MTEC in Defining Worst Case Runs

EPA does not appear to consider the relative MTEC levels when classifying runs as WC, IB or N. Yet MTEC is a direct indicator of the metals feed rates during the emissions testing, and is very relevant in defining worst case. Two examples are given below from the cement kiln SVM database. Similar issues can be seen in the metals database for other HAPs and categories of combustors.

- Source 206: An emissions level of 276 μg/dscm is coupled with an MTEC level of 171,669. Yet a comparable MTEC level of 167,382 results in an emission of 2255.8 μg/dscm. The latter condition should be labeled NA or NE, since a higher comparable MTEC level yields a lower emission of 275 μg/dscm.

- Source 319: An emissions level of 675.6 μg/dscm is coupled with an MTEC level of 200,597. Yet a lower MTEC level of 164,071 results in an emission of 1176 μg/dscm. The latter condition should be labeled NA or NE, since a higher MTEC level yields a lower emission of 675.6 μg/dscm.

In general, EPA should use the MTEC data for metals to confirm the correct classification of WC conditions. If a higher MTEC level is coupled with a lower emission level, then that condition should be considered WC and the other condition labeled as NA or NE.

As discussed above, the feedrate MTEC for metals and chlorine is used as one of many indicators to determine if a test condition is used to set permit limits. WC or IB rating flags are assigned only to conditions which were used to set permit limits. However, the feedrate MTEC was not used as the only indicator in assigning the WC flag. For example, if two test conditions were conducted during the same campaign, and both were used to set permit limits, WC was assigned to the condition with the highest emissions regardless of the feedrate MTEC. IB was assigned to the condition with the lower emissions rate.

Miscellaneous Points

The following are specific anomalies noted with certain units.

- Source 203 - D/F: A condition labeled WC with a result of 5.061 ngTEQ/dscm was also indicated in the comments as having incorrect APCD temperature data. Since APCD temperature affects emissions of dioxins and furans, this test condition should have a qualifier of NA or NE.

There is no doubt this test condition is conducted under worst case, permit limit setting conditions, thus it is assigned a WC rating. Whether or not the reported APCD temperature is accurate is not important in determining that the test condition is WC.

· Source 300 - PM: The classification of condition C10 should be reconsidered. Condition C10 was done under minimum ESP power, which would be a worse case for PM. This condition label should be changed from IB to WC.

300C11 was considered to be under the same testing campaign. 300C11 (not normal, not research testing) is determined to be WC because its PM emissions are higher than C10. The commenter did not understand that tests from different dates were sometimes grouped under the same campaign if they were conducted close together as part of the same CoC or trial burn demonstration, or if the second testing was to provide additional operating conditions to be added to past conditions (i.e., the second testing did not override previous operating limits, instead added new ones). This resulted in most of the remaining commenter issues.

· Source 403 - PM: This source has 4 test conditions associated with a 1997 test. Test conditions C12 and C13 are labeled specifically as being done for “PM Compliance,” yet are given a designation of IB. A different test condition, C10, done for metals is labeled as WC. Condition C10 should be re-designated as IB and Conditions C12 and C13 should be re-designated as WC.

· Source 200 - all HAPS: In the PM database it was noted that condition C4 failed a leak test. This condition may need to be labeled as NA not only for PM, but for all of the other HAPs as well.

· Source 300 - all HAPS: Condition C10 was noted in the PM database as having an ESP upset during one of the runs. This test condition should be classified as NA for all HAPS.

Agree that for the specific single run, all HAP data should not be considered. However, the rest of the test condition runs, without the one run during which the ESP malfunctioned, are valid, and were used for setting permit limits.

· Source 359 - PM: The 1989 test has a condition C2 that is described as “medium feed.” This test is labeled “WC,” and has a PM result of 0.0193 grains/dscf. Another test condition from the same date, C3, is described as “high feed” and has a higher PM result of 0.0264 grains/dscf. Yet this run is labeled “IB” in the database. Considering both the higher result and the designation of higher feed, condition C3 should be corrected to a “WC” qualifier, and condition C2 should be corrected to “IB”.

- Source 3005 - all HAPS: This source added a new mode of operation according to notes in the PM database in 2000. Yet the PM from the more recent test is considered "IB," and the older 1997 tests are considered "WC." When a new mode of operation is added, it would seem that the older test condition data should be reclassified, eliminating the WC classification for the older data. The other HAP databases should be corrected similarly.

- Source 359 - PM and all HAPS: In general, if one run fails the current PM standard of 0.08 grains/dscf, but the test condition average is still below 0.08 grains/dscf, then that test condition should be retained in the database for consideration and not given a designation of NA or NE. The other HAP data should be retained as well. Although source 359 is pointed out as an example, there are other situations as well in the database, and EPA should reconsider the classification of data where one run fails PM but the overall test condition average passes. Two other examples are source 707, condition C9 from 1989 and source 825, condition C11 from 1995.

  <u>Test conditions with a run above the current RCRA standard continue to be classified as not evaluated. This is because these test conditions are not valid compliance demonstrating, permit setting conditions since RCRA standards were not met.</u>

- Source 503 - PM: The 1991 test has 4 conditions. All are labeled as "IB." It would seem that one of the four conditions should have a designation of "WC." This designation should be assigned to condition C6 with a PM result of 0.0285.

- Source 714 - PM and other HAPS: The 1991 test is labeled as a WC for PM. Yet this appears to be a special test, since the test condition identifies the purpose of the test as being to evaluate performance when burning TDI residues. For such special purpose tests, the designation should be "N" and not WC, since it does not appear that this test was done for compliance purposes. EPA should confirm if the designation of WC for the 1991 tests for this source is appropriate.

  <u>No change is made. This test condition is a trial burn, worst case, permitting limit setting condition when burning TDI residues.</u>

CONCLUSION

Thank you for the opportunity to submit these comments on the Notice of Data Availability for the hazardous waste combustor emissions database. Please direct any questions or requests for additional information to the undersigned.

Respectfully submitted,

David R. Case
Executive Director

Enclosure: CD-ROM List of Files:

327 SK Aragonite DB Tables.doc
327 SK Aragonite Corrected.xls
331 Ross Corrected.xls
221 SK Deer Park Corrected.xls
488 SK Deer Park Corrected.xls
489 SK Deer Park Corrected.xls
609 SK Deer Park Corrected.xls
M035043602223787 1700.pdf
M03504390222378886 00.pdf
M05404230222379190 00.pdf
M05404440222379024 00.pdf

cc: Mr. Frank Behan (behan.frank@epa.gov)

Comment ID No. 27 – Eastman Chemical Co

Comment Summary – Provided comments on accuracy of the data for various Eastman Chemical incinerators and boilers. Comments were contained in handwritten notes on printouts of the Excel NODA files. Supporting information from the Compliance test reports was also attached.

Also, the commenter objects to inclusion of data from units that have been recently upgraded to meet the 1999 HWC MACT rule; and would like older data from these units included in the database. Also, there is concern about EPA's response in a previous NODA to how it will handle stack gas emission non-detects.

Comment Response – Made most minor data changes as requested. See below for responses in blue, underlined type to additional issues.

Comment ID No. 27 – Eastman Chemical Co

Eastman Chemical Company (Eastman) owns and operates several incinerators, industrial boilers and industrial furnaces that are addressed in this Notice of Data Availability (NODA). Specific Eastman units included in the NODA are:

Tennessee Operations:

1. ID No. 809	Rotary Kiln #1 Incinerator
2. ID No. 810	Liquid Chemical Destructor Incinerator
3. ID No. 1011	Industrial Boiler No. 20
4. ID No. 1012	Industrial Boiler No. 22
5. ID No. 719	Industrial Boiler No. 24

Texas Operations:

1. ID No. 613	Rotary Kiln Incinerator
2. ID No. 492	Fluidized Bed Incinerator
3. ID No. 854	HC1 Recovery Furnace

Arkansas Operations:

1. ID No. 484	No. 2 Incinerator
2. ID No. 1009	Boiler No. 3

Eastman has reviewed the data presented in the NODA. Information for Eastman's units was generally accurate. However, several minor differences were noted compared to data included in Eastman's test reports. Those differences are noted in the attached marked-up pages from the NODA. Where needed, pages from the test reports are attached to verify the test results that were actually achieved.

Eastman's major concern with the database is that emissions data generated after units have been upgraded to meet MACT standards are included in the database. For instance, the

NODA contains data from Eastman's Tennessee incinerators (units 809 and 810) that was generated after the units had been upgraded to meet the September 30, 1999 HWC MACT standards (Conditions CIO and C11). The only pre-MACT data included in the database is from tests conducted in June 1991 (Conditions C1 and C2). These last conditions (C1 and C2) actually represent tests that were only designed to demonstrate metals emissions. More comprehensive data for these units is included in the "Trial Burn Report for Tennessee Eastman Company B-248 Incineration Facility" submitted to the Tennessee Division of Solid Waste Management (TDSWM) in April 1989. Eastman believes that this data should be included in the database. EPA should be able to obtain a copy of the 1989 trial burn report from TDSWM. Eastman will help provide that data if it cannot be obtained from TDSWM. Eastman is spending in excess of $50 million dollars to upgrade the air pollution controls on its three Tennessee incinerators. While EPA has not yet identified how the database will be utilized to establish final MACT standards, Eastman is concerned that use of data from upgraded units will result in overly stringent "MACT of MACT" limits. Eastman is especially concerned that such limits would jeopardize the multi-year, multi-million dollar efforts that have already been undertaken to upgrade its combustion units.

> <u>The older test data from incinerator ID Nos. 809 and 810 (from trial burn testing in 1989) has been obtained and added to the revised database as requested. More recent compliance testing from these (and other) units which have upgraded to meet the anticipated 1999 HWC MACT rule have been kept in the HWC database. The revised data base contains the most currently available operating performance and status of all hazardous waste combustors (including all cement kilns, lightweight aggregate kilns, and boilers). Much of this data has been collected from testing done in the time period of 1999 through 2002. When setting the MACT standards, EPA will carefully consider the impact that data from recently upgraded facilities has on the determination of the MACT standards. See the proposed Replacement HWC MACT Rule preamble and technical background documents for detailed discussions on how the data are used to develope the replacement MACT standards.</u>

On August 23, 2000, Eastman submitted comments on EPA's June 27, 2000 Phase II NODA (65 FR 39581). In its comments, Eastman suggested that EPA examine the way the non-detect values for the front and back-half of the multi-metals train are handled. EPA responded to Eastman's comments in section 4.7 of Appendix II of the July HWC Data Base Report. EPA says that it will not reexamine the database even in light of Eastman's comments. EPA partially rationalizes this decision on the basis that "... this type comment was raised from only one source, it would strongly appear this problem is not wide spread or common throughout the database, and instead confined to only this one facility". To the contrary, Eastman finds through discussions with other companies that this situation may occur commonly, not only with the multi-metals train, but also with any train that has multiple sampling points. EPA should base its decision on whether to examine this issue on its technical merits and importance to establishing a credible database - not on whether it will create more work for the agency. Eastman suggests that EPA re-visit this issue.

See same comment was brought up, and responsed to, in the above Comment ID No. 15/16 (Issue 5).

If you have any questions concerning Eastman's submittal, please contact me at (423) 229-2834.

Gerald Wrye
Environmental Affairs
P.O. Box 511, B-54D

Comment ID No. 28 – Celanese Chemicals

Comment Summary – Provided comments on the data for the Celanese boilers ID Nos. 1018 and 721. Comments were contained in attached paper copies (and computer disk copy) of Excel files with noted changes. Also, an additional copy of recent chromium emissions under normal operating conditions was included.

Comment Response – Made changes as requested. Added new normal test data as provided by commenter.

Comment ID No. 28 – Celanese Chemicals

Sent By Electronic and Federal Express

August 16, 2002

RCRA Docket Information Center
U.S. Environmental Protection Agency Headquarters (EPA HQ)
Office of Solid Waste
Ariel Rios Building (5305G)
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0002

Re: RCRA Docket Number RCRA-2002-0019
"NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (NODA)"

Dear Sir or Madam:

The Celanese Chemicals is pleased to submit comments on NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (NODA) noticed in the July 2, 2002 Federal Register (67 FR 44452). These comments apply to Docket Number RCRA-2002-0019.

The attached comments are organized by facility for comments pertaining the individual source data sheets and by pollutant for comments on the pollutant specific summary sheets as follows:

1. Ticona Polymers No. 1018
2. Celanese, Ltd., Bay City No. 721
3. Liquid Boilers -- Mercury
4. Liquid Boilers -- Low Volatile Metals
5. Liquid Boilers -- Semi-Volatile Metals

6. Liquid Boilers -- Chlorine
7. Liquid Boilers -- Dioxin & Furan
8. Liquid Boilers -- Particulate Matter

A computer disk containing spreadsheet data files of the above comments is included.

Also included in this package (paper submittal only) are summary test results from the liquid boiler located at the Ticona facility ID No. 1018. This is baseline testing conducted by the site to better understand chrome emissions. It is the opinion of Celanese that the results of this test are more representative of the current conditions of the boiler.

Celanese is a member of the American Chemistry Council (ACC) that represents the leading companies engaged in the business of chemistry. Celanese fully supports comments submitted by ACC in reference to this NODA.

If you have any questions about our comments, please contact John McCloskey at (281) 474-6544.

Sincerely,

John A. McCloskey
RCRA / Waste Leader
Celanese Chemicals

Comment ID No. 29 – Rubicon, Inc.

Comment Summary – Provided comments on the data for the Rubicon boiler ID Nos. 812, 813, 814, and 815. Comments included copies of Excel database tables, with changes shown in bold.

Comment Response – Made changes to most comments as requested.

Comment ID No. 29 – Rubicon, Inc.

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Comments on NODA for Final Replacement Standards and Phase II Database
Rubicon Inc.

These comments will be for the following sources: 812, 813, 814, 815 and the six liquid boiler summary spreadsheets as identified in the NODA Phase II Database. The comments are contained in two sections. Section 1 will be organized for each source by each spreadsheet for that source. Section 2 will be organized for each liquid boiler summary spreadsheet for sources 812, 813, 814, and 815.

SECTION 1

General Comment Overall the accuracy of the database is good with respect to Rubicon's sources, 812, 813, 814, and 815. The only discrepancies noted were incorrect cell reference, missing information and double correcting detection limits. Spreadsheets for each source that incorporate Rubicon Inc.'s comments are attached. The cells that have been changed are in bold.

Source 812 - TDI Boiler, Rubicon Inc.

Stack Gas Emissions Spreadsheet - 812

Database The emission concentrations for analytes are corrected to one-half the value for non detects.

Comment 1 The emissions values reported in the Risk Assessment Trial Burn Report submitted on December 29, 1997 are already reported at one-half the detection limit.

The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for these analytes have already been made and reported. The current database values are one-quarter of the detection limit.

Requested Action: Remove every detection level correction from the Stack Gas Emissions Spreadsheet . A spreadsheet is attached indicating these changes.

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Feedstreams Spreadsheet - 812
Database 812C1: The values for Thermal Feedrate, Estimated Firing Rate, Stack Gas Flowrate and Oxygen are blank.

Comment 2 The Reported numbers for Thermal Feedrate, Stack Gas Flowrate and Oxygen are:

812C1		Run 1	Run 2	Run 3	CondAvg
Feedstream Description		LUWA bottoms	LUWA bottoms	LUWA bottoms	LUWA bottoms
Thermal Feedrate	MMBtu/hr	21.36	21.4	21.71	21.5
Estimated Firing Rate		21.3	21.3	20.0	20.9
Stack Gas Flowrate	Dscfm	7615	7366	7329	7436.7
Oxygen	%	12.2	11.9	12.4	12.2

These Thermal Feedrate numbers are found in Tables 2-1 through 2-3 and the Stack Gas Flowrate and Oxygen numbers are found on Appendix D of the TDI Boiler Compliance Trial Burn Report submitted on December 29, 1997.

The Estimated Firing Rate numbers are calculated using the equations already in the Feedstream spreadsheet.

Requested Action: Update 812C1 values for Thermal Feedrate, Estimated Firing Rate, Stack Gas Flowrate and Oxygen to the reported numbers for this condition. A spreadsheet is attached indicating these changes.

Database The 812C2 LUWA Bottoms Chlorine feed rate for all three runs are listed below:

812C2		Run 2	Run 4	Run 5	Avg
Stream Description		LUWA bottoms	LUWA bottoms	LUWA bottoms	LUWA bottoms
Chlorine	lb/hr	309	273	267	96.8

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Comment 3 The chlorine values listed in the database for Runs 2, 4 and 5 are double counting the chlorine spike which is already accounted for in the database. The reported 812C2 LUWA Bottoms Chlorine feed rate for all three runs are:

812C2		Run 2	Run 4	Run 5	Avg.
Stream Description		LUWA bottoms	LUWA bottoms	LUWA bottoms	LUWA bottoms
Chlorine	lb/hr	106	104	80.3	96.8

These are found on Table 2-12 of the TDI Boiler Compliance Trial Burn Report submitted on December 29, 1997.

Requested Action: Update 812C2 LUWA Bottoms Chlorine feed rate to the reported numbers for this condition. A spreadsheet is attached indicating these changes.

Emissions and Feedrate Data Summary Sheet -- condition averages, @ 7%02 -812

Database Under the 812C1 Heat Input for Hazardous waste, cell F8, the formula is "=feed!AJ9". Which returns a value of 0.

Comment 4 The correct reference is cell L9 which is the average Hazardous Waste heat input for 812C1.

Requested Action: Change the formula., in F8 to "=feed!L9". A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, feed rate for Mercury cell AB9, the formula is "=feed!L50/2".

Comment 5 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Mercury is already accounted for in the feed spreadsheet. The formula in cell AB9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AB9 to "=feed!L50". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, feed rate for Low Volatile Metals cell AJ9, the formula is "=feed!L56 +feed!#REF!". Which returns a value of #REF.

Comment 6 The correct reference is cell feedlT56 which is the average Chromium Spike rate 812C2.

Requested Action: Change the formula in AJ9 to "=feed!L56 +feedlT56". A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, feed rate for Ash cell AQ9, the formula is "=feed!L41/2".

Comment 7 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Ash is already accounted for in the feed spreadsheet. The formula in cell AQ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AQ9 to "=feed!L41 ". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate for Lead, cell AZ9, the formula is "=feed!L49/2".

Comment 8 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Lead is already accounted for in the feed spreadsheet. The formula in cell AZ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AZ9 to "=feedlL49". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate for Cadmium, cell 13139, the formula is "=feed!L47/2".

Comment 9 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Cadmium is already accounted for in the feed spreadsheet. The

formula in cell BB9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BB9 to "=feed!L47". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate for Arsenic, cell BD9, the formula is "=feed! L44/2".

Comment 10 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Arsenic is already accounted for in the feed spreadsheet. The formula in cell BD9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BD9 to "=feed!L44". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate for Beryllium, cell BF9, the formula is "=feed!L46/2".

Comment 11 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Beryllium is already accounted for in the feed spreadsheet. The formula in cell BF9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BF9 to "=feed!L46". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate for Chromium, cell BH9, the formula is =feed!L48+feed!#REF!". Which returns a value of #REF.

Comment 12 The correct reference is cell feedlT48 which is the average Chromium Spike rate 812C2.

Requested Action: Change the formula in BH9 to "˜feed IL48+feedlT48". A spreadsheet is attached indicating these changes.

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Database Under the Individual Metals feed rate for Antimony, cell BJ9, the formula is "=feed!L43/2".

Comment 13 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Antimony is already accounted for in the feed spreadsheet. The formula in cell BJ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BJ9 to "=feedlL43". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals Emissions section,
812C2 for Nickel, cell C19, the formula is
“=AVERAGE(emiss!G72/2,emiss!172/2,emiss!K72/2)".

Comment 14 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for Nickel was reported at one-half the detection limit, see comment 1. The formula in cell C19 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in C19 to "=AVERAGE(emiss!G72,emiss!l72,emiss!K72)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals Emissions section, 812C2 for Selenium, cell C09, the formula is "=AVERAGE(emiss!G73/2,emiss!l73/2,emiss!K73/2)".

Comment 15 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for Selenium was reported at one-half the detection limit, see comment 1. The formula in cell C09 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in CO9 to "=AVERAGE(emiss!G73,emiss!l73,emiss!K73)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

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Source 813 - Aniline II Boiler, Rubicon Inc.
Stack Gas Emissions Spreadsheet - 813

Database The emission concentrations for analytes are corrected to one-half the value for non detects.

Comment 16 The emissions values reported in the Risk Assessment Trial Burn Report submitted on December 29, 1997 are already reported at one-half the detection limit.

The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for these analytes have already been made and reported. The current database values are one-quarter of the detection limit.

Requested Action: Remove every detection level correction from the Stack Gas Emissions Spreadsheet. A spreadsheet is attached indicating these changes.
Feedstreams Spreadsheet - 813

Database The Average ODCB Spiking rate for 813C1 has been omitted.

Comment 17 The Average ODCB Spiking rate for 813C1 is 30.2 lbs/hr as reported on Tables 2-1 through 2-3 in the Aniline II Trial Burn Report submitted on December 29, 1997..

Requested Action: Include the Average ODCB Spiking rate for 813C1 of 30.2 lbs/hr. A spreadsheet is attached indicating these changes.

Emissions and Feedrate Data Summary Sheet -- condition averages, @ 7%02 -813

Database Under the Feed Rate Characteristics section, 813C2 feed rate for Mercury cell AB9, the formula is "=feed!144/2".

Comment 18 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Mercury is already accounted for in the feed spreadsheet. The formula in cell AB9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AB9 to "=feed!144". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, 813C3 feed rate for Mercury cell AB10, the formula is "=feed!184/2".

Comment 19 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Mercury is already accounted for in the feed spreadsheet. The formula in cell AB10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AB10 to "--feed!184". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.
Database Under the Feed Rate Characteristics section, 813C2 feed rate for Total Chlorine cell AN9, the formula is "=feed!136/2".

Comment 20 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Total Chlorine is already accounted for in the feed spreadsheet. The formula in cell AN9 returns a number-that is one-quarter of the detection limit.

Requested Action: Change the formula in AN9 to "=feed!136". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, 813C3 feed rate for Total Chlorine cell AN 10, the formula is "=feed!176/2".

Comment 21 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Total Chlorine is already accounted for in the feed spreadsheet. The formula in cell AN10 returns a number that is one-quarter of the detection limit.

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Requested Action: Change the formula in AN10 to "=feed!176". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C2 feed rate for Lead, cell AZ9, the formula is "=feed!143/2".

Comment 22 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Lead is already accounted for in the feed spreadsheet. The formula in cell AZ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AZ9 to "=feed!143". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C3 feed rate for Lead, cell AZ10, the formula is "=feed!183/2".

Comment 23 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Lead is already accounted for in the feed spreadsheet. The formula in cell AZ10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AZ10 to "=feed!183". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C2 feed rate for Cadmium, cell BB9, the formula is "-¯feed! 141/2".

Comment 24 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Cadmium is already accounted for in the feed spreadsheet. The formula in cell BB9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BB9 to "=feed!141 ". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C3 feed rate for Cadmium, cell BB10, the formula is "=feed!181/2".

Comment 25 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Cadmium is already accounted for in the feed spreadsheet. The formula in cell BB10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BB10 to "-¯feed!I8l". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C2 feed rate for Arsenic, cell BD9, the formula is "=feed!L38/2".

Comment 26 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Arsenic is already accounted for in the feed spreadsheet. The formula in cell BD9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BD9 to "=feed!L38". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C3 feed rate for Arsenic, cell BD10, the formula is "=feed!L78/2".

Comment 27 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Arsenic is already accounted for in the feed spreadsheet. The formula in cell BD10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BD10 to "=feed!L78". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C2 feed rate for Beryllium, cell BF9, the formula is "=feed!L40/2".

Comment 28 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Beryllium is already accounted for in the feed spreadsheet. The formula in cell BF9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BF9 to "=feedlL40". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C3 feed rate for Beryllium, cell BF10, the formula is "=feed!L80/2".

Comment 29 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Beryllium is already accounted for in the feed spreadsheet. The formula in cell BF10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BF10 to "=feed!L80". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C2 feed rate for Chromium, cell BH9, the formula is "=feed!L42/2".

Comment 30 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Chromium is already accounted for in the feed spreadsheet. The formula in cell BH9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BH9 to "=feed!L42". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C3 feed rate for Chromium, cell BH10, the formula is "=feed!L82/2".

Comment 31 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Chromium is already accounted for in the feed spreadsheet. The formula in cell BH10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BH10 to "=feed!L82". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C2 feed rate for Antimony, cell BJ9, the formula is "=feed!L37/2".

Comment 32 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Antimony is already accounted for in the feed spreadsheet. The formula in cell BJ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BJ9 to "=feed!L37". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 813C3 feed rate for Antimony, cell BJ10, the formula is "=feed!L77/2".

Comment 33 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection-level adjustment for Antimony is already accounted for in the feed spreadsheet. The formula in cell BJ10 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BJ10 to "=feed!L77". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals Emissions section, 813C3 for Selenium, cell CO10, the formula is "=AVERAGE(emiss!G80/2,emiss!180,emiss!K80/2)".

Comment 34 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for Selenium was reported at one-half the detection limit, see comment 16. The formula in cell CO10 returns a number that is one-quarter of the detection limit.

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Requested Action: Change the formula in CO10 to "=AVERAGE(emiss!G80,emiss!l80,emiss!K80)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

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Source 814 - DPA I Superheater, Rubicon Inc.
Stack Gas Emissions Spreadsheet - 814

Database The emission concentrations for analytes are corrected to one-half the value for non detects.

Comment 35 The emissions values reported in the Risk Assessment Trial Burn Report submitted on December 29, 1997 are already reported at one-half the detection limit.

The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for these analytes have already been made and reported. The current database values are one-quarter of the detection limit.

Requested Action: Remove every detection level correction from the Stack Gas Emissions Spreadsheet. A spreadsheet is attached indicating these changes.

Feedstreams Spreadsheet - 814

Database Comment in the Database states "metals feedrates in risk burn report not consistent with those in trial burn report; should be same?".

Comment 36 The metals feed rates for run 3A, 4A, and 5A are from the same test but they are calculated in different way for each report. The trial burn report contains the maximum hourly rolling average and the risk burn report contains the average hourly rolling average. Either one may be used.

Database The constituent feedrates for the Org Liq Waste for 814C2 runs 3A, 4A, and 5A currently contain the total constituent feedrates for the liquid waste and the process vents.

Comment 37 If just the constituent feedrates for the Org Liq Waste go here, they can be found in table 2-10 of the DPA I trial burn report for the maximum hourly rolling average or in tables 2-1 through 2-3 of the Risk assessment Report for the average hourly rolling average, submitted on December 29, 1997. Either the maximum hourly rolling average or the average hourly rolling average for nickel and selenium can be or in tables 2-1 through 2-3 of the Risk assessment Report. These constituents were only measured in the Organic Liquid Waste.

Database The feedrates for nickel and selenium are not included in this spreadsheet.

Comment 38 Either the maximum hourly rolling average or the average hourly rolling average for nickel and selenium can be or in tables 2-1 through 2-3 of the Risk assessment Report submitted December 29, 1997. These constituents were only measured in the Organic Liquid Waste.

Requested Action: Add either the maximum hourly rolling average or the average hourly rolling average for nickel and selenium. A spreadsheet is attached which includes the maximum hourly rolling average for nickel and selenium which are consistent with the other constituent feedrates already in the spreadsheet.

Database 814C2 list ODCB spiking rates.

Comment 39 ODCB was not spiked during this condition. ODCB was measured in the liquid feed for the risk assessment burn and was not detected.

Requested Action: Remove the ODCB spiking rates from 814C2. A spreadsheet is attached indicating these changes.

Emissions and Feedrate Data Summary Sheet --condition averages, -@ 7%02 -814

Note: The comments on this spreadsheet are based on original cell references. With the addition Nickel and Selenium from Comment 38 some of the cell references may be off by two cells.

Database Under the 814C2 Heat Input for Hazardous waste, cell F8, the formula is =feed!#REF!. Which returns a value of #REF!.

Comment 40 The correct reference is cell L20 which is the average Hazardous Waste heat input for 814C2.

Requested Action: Change the formula in F8 to "=feed!L9". A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, 814C2 feed rate for Mercury cell AB9, the formula is "=feed!L52/2".

Comment 41 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Mercury is already accounted for in the feed spreadsheet. The formula in cell AB9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AB9 to "=feed!L52". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Feed Rate Characteristics section, 814C2 feed rate for Total Chlorine cell AN9, the formula is "=feed!L44/2".

Comment 42 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Total Chlorine is already accounted for in the feed spreadsheet. The formula in cell AN9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AN9 to "=feed!L44". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2--feed rate for Lead,-cell AZ9, the formula is "=feed!L51/2".

Comment 43 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Lead is already accounted for in the feed spreadsheet. The formula in cell AZ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AZ9 to "=feed!L51 ". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2 feed rate for Cadmium, cell BB9, the formula is "=feed!L49/2".

Comment 44 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Cadmium is already accounted for in the feed spreadsheet. The formula in cell BB9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BB9 to "=feedlL49". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2 feed rate for Arsenic, cell BD9, the formula is "=feed!L46/2".

Comment 45 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Arsenic is already accounted for in the feed spreadsheet. The formula in cell BD9 returns a number that is one-quarter of the detection limit.

Requested Action:' Change the formula in BD9 to "=feed!L46". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2 feed rate for Beryllium, cell BF9, the formula is "=feed!L48/2".

Comment 46 The Notice of Data Availability, dated ' July-2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Beryllium is already accounted for in the feed spreadsheet. The formula in cell BF9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BF9 to "=feed!L48". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2 feed rate for Chromium, cell BH9, the formula is "=feed!L50/2".

Comment 47 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for returns a number that is one-quarter of the detection limit.

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Chromium is already accounted for in the feed spreadsheet. The formula in cell BH9

Requested Action: Change the formula in BH9 to "=feed!L50". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.
Database Under the Individual Metals feed rate, 814C2 feed rate for Antimony, cell BJ9, the formula is "=feed!L45/2".

Comment 48 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Antimony is already accounted for in the feed spreadsheet. The formula in cell BJ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BJ9 to "=feed!L45". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2 feed rate for Nickel, cell BL9, the formula is =feed!#REF!. Which returns a value of #REF!.

Comment 49 The correct reference is cell L55 which is the feed rate for Nickel for 814C2. See comment 38.

Requested Action: Change the formula in -BL9 to "=feed!L55". A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 814C2 feed rate for Selenium, cell BR9, the formula is =feed!#REF!. Which returns a value of #REF!.

Comment 50 The correct reference is cell L56 which is the feed rate for Selenium for 814C2. See comment 38.

Requested Action: Change the formula in BR9 to "=feed!L56". A spreadsheet is attached indicating these changes.

Database Under the Individual Metals Emissions section, 814C2 for Selenium, cell CO9, the formula is "=AVERAGE(emiss!G69/2,emiss!169/2,emiss!K69/2)".

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Comment 51 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for Selenium was reported at one-half the detection limit, see comment 35. The formula in cell C09 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in CO9 to "=AVERAGE(emiss!G69,emiss!I69,emiss!K69)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.
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Source 815 - DPA II Superheater, Rubicon Inc.
Stack Gas Emissions Spreadsheet - 815

Database The emission concentrations for analytes are corrected to one-half the value for non detects.

Comment 52 The emissions values reported in the Risk Assessment Trial Burn Report submitted on December 29, 1997 are already reported at one-half the detection limit.

The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for these analytes have already been made and reported. The current database values are one-quarter of the detection limit.

Requested Action: Remove every detection level correction from the Stack Gas Emissions Spreadsheet. A spreadsheet is attached indicating these changes.

Feedstreams Spreadsheet - 815

Database The constituent feedrates for the Org Liq Waste for 815C2 A-runs 1A, 2A, and 3A currently contain the total constituent feedrates for the liquid waste and the process vents.

Comment 53 If just the constituent feedrates for the Org--Liq Waste go here, they can be found in table 2-10 of the DPA II trial burn report submitted on December 29, 1997.

Database The constituent feedrates for the Org Liq Waste for 815C2 B-runs 1 B, 2B, and 3B currently contain the total constituent feedrates for the liquid waste and the process vents.

Comment 54 If just the constituent feedrates for the Org Liq Waste go here, they can be calculated from the analytical data found on table 2-37 and the process information found on tables 2-10 through 2-12 in the Risk Assessment Trial Burn report submitted on December 29, 1997.

Database 815C2 list ODCB spiking rates.

Comment 55 ODCB was not spiked during this condition. ODCB was measured in the liquid feed for the risk assessment burn and was not detected.
Requested Action: Remove the ODCB spiking rates from 815C2. A spreadsheet is attached indicating these changes.

Database Under the 815C2 A runs feedrate MTEC calculations for SVM, cell L52, the formula is "=(L48+L46)/2".

Comment 56 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for SVM is already accounted for in the feed spreadsheet. The formula in cell L52 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in L52 to "=(L48+L46)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the 815C2 A runs feedrate MTEC calculations for LVM, cell L53, the formula is "=(L43+L45+L47)/2".

Comment 57 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for LVM is already accounted for in the feed spreadsheet. The formula in cell L53 returns a number that-is-one-quarter of the detection limit.

Requested Action: Change the formula in L53 to "=(L43+L45+L47)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.
Emissions and Feedrate Data Summary Sheet -- condition averages, @ 7%02 -815

Note: The comments on this spreadsheet are based on original cell references. Cell references may be off by I row, see comments 58, 60, 65 and 78.

Database Stack Gas Emissions data for D/F's and metals are listed in 815C2A.

Comment 58 These emissions were measured During 815C2B.

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Requested Action: Place these emissions under 815C2B. A spreadsheet is attached indicating these changes.

Database Under the Stack Gas Emissions section, 815C2B for Mercury cell R9, the formula is "=SUM(emiss!G65,emiss!165/2,emiss!K65/2)/3".

Comment 59 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for mercury was reported at one-half the detection limit, see comment 51. The formula in cell R9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in R9 to "=SUM(emisslG65,emissll65,emisslK65)/3". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Feedrate Characteristics for 815C2A and 815C2B. Comment 60 This data is off by a whole row.

Requested Action: Move all this data down one row. A spreadsheet is attached indicating these changes.

Database Feedrate Characteristics for SVM, LVM, TCl and ash in 815C2A are blank.

Comment 61 This data can be referenced in the feedstream spreadsheet.

Requested Action: Reference this data in the Emissions and Feedrate Data Summary Sheet -- condition averages, @ 7% 02 If it is necessary for MACT Rule making.

Database Under the Feed Rate Characteristics section, 815C2A feed rate for Mercury cell AB8, the formula is."=feed!149/2".

Comment 62 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Mercury is already accounted for in the feed spreadsheet. The formula in cell AB8 returns a number that is one-quarter of the detection limit.

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Lead is already accounted for in the feed spreadsheet. The formula in cell AZ8 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AZ8 to "=feed1148". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2B feed rate for Lead, cell AZ9, the formula is "=feed!184/2".

Comment 67 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Lead is already accounted for in the feed spreadsheet. The formula in cell AZ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in AZ9 to "=feedl184". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2A feed rate for Cadmium, cell BB8, the formula is "=feed!146/2".

Comment 68 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Cadmium is already accounted for in the-feed spreadsheet. The formula in cell BB8 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BB8 to "=feed1146". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2B feed rate for Cadmium, cell BB9, the formula is "=feed!182/2".

Comment 69 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Cadmium is already accounted for in the feed spreadsheet. The formula in cell BB9 returns a number that is one-quarter of the detection limit.

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Requested Action: Change the formula in BB9 to "=feed!182". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2A feed rate for Arsenic, cell BD8, the formula is "=feed!L43/2".

Comment 70 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Arsenic is already accounted for in the feed spreadsheet. The formula in cell BD8 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BD8 to "=feed!L43". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2B feed rate for Arsenic, cell BD9, the formula is "=feed!L79/2".

Comment 71 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Arsenic is already accounted for in the feed spreadsheet. The formula in cell BD9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BD9 to "=feed!L79". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2A feed rate for Beryllium, cell BF8, the formula is "=feed!L45/2".

Comment 72 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Beryllium is already accounted for in the feed spreadsheet. The formula in cell BF8 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BF8 to "=feed!L45". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2B feed rate for Beryllium, cell BF9, the formula is "=feed!L81/2".

Comment 73 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Beryllium is already accounted for in the feed spreadsheet. The formula in cell BF9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BF9 to "=feed!L81". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2A feed rate for Chromium, cell BH8, the formula is "=feed!L4712".

Comment 74 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Chromium is already accounted for in the feed spreadsheet. The formula in cell BH8 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula "lin BH8 to "=feed!L47". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2B feed rate for Chromium, cell BH9, the formula is "=feed!L83/2".
Comment 75 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Chromium is already accounted for in the feed spreadsheet. The formula in cell BH9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BH9 to "=feed!L83". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

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Database Under the Individual Metals feed rate, 815C2A feed rate for Antimony, cell BJ8, the formula is "=feed!L42/2".

Comment 76 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Antimony is already accounted for in the feed spreadsheet. The formula in cell BJ8 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BJ8 to "=feedlL43". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals feed rate, 815C2B feed rate for Antimony, cell BJ9, the formula is "=feed!L78/2".

Comment 77 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The detection level adjustment for Antimony is already accounted for in the feed spreadsheet. The formula in cell BJ9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BJ9 to "=feedlL78". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Individual Metals Emissions are listed under 815C2A.

Comment 78 This data is off by a whole row. These emissions were measured During 815C2B.

Requested Action: Move all this data down one row. A spreadsheet is attached indicating these changes

Database Under the Individual Metals Emissions section, 815C2B, see comment 77, for Cadmium cell BW9, the formula is "=AVERAGE(emiss!G62,emiss!162,emiss!K62)/2".

Comment 79 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for Cadmium was reported at one-half the detection limit, see comment 52. The formula in cell BW9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BW9 to "=AVERAGE(emiss!G62,emissll62,emisslK62)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

Database Under the Individual Metals Emissions section, 815C2B, see comment 77, for Arsenic cell BY9, the formula is "=AVERAGE(emiss!G59,emiss!159,emiss!K59)/2".

Comment 80 The Notice of Data Availability, dated July 2, 2002 states that analytes reported at the detection level are assumed present at one-half of the detection limit. The Emissions data for Arsenic was reported at one-half the detection limit, see comment 52. The formula in cell BY9 returns a number that is one-quarter of the detection limit.

Requested Action: Change the formula in BY9 to "=AVERAGE(emiss!G59,emissII59,emiss!K59)". This will represent one-half of the detection limit. A spreadsheet is attached indicating these changes.

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SECTION 2

General Comment EPA requested commenters review the classifications for their sources in the Database. The classification for sources 812, 813, 814 and 815 as liquid fuel boilers are correct. However subcategories of liquid fuel boilers based on wet controls, dry controls and no control should be considered.

General Comment Any information contained in the six liquid boiler summary spreadsheets pertaining to sources 812, 813, 814, and 815 that have been changed due to comments 1 through 80 need to be updated.

Liquid Boilers Mercury Summary Spreadsheet

Database Sootblowing status for 813C3 is Unk

Comment 81 There was no sootblowing during this test condition for source 813.

Requested Action: Change the sootblowing status for 813C3 to N.

Liquid Boilers PCDD/PCDF Summary Spreadsheet

Database Sootblowing status for 812C3, 813C3, 814C2, and 815C2 are U.

Comment 82 There was no sootblowing during any of these test conditions for sources 812,813,814 and 815.

Request Action: Change the sootblowing status for 813C3, 814C2, and 815C2 to N.

Database Classification for 812C3 is NA with the comment "Cannot define WC operating conditions for wet or no controls".

Comment 83 The source 812 is equipped with a scrubber and the L/G, pH and blowdown rate were operated at 2.12 lb/lb, 8.34, and 3.32 gpm, respectively during this condition. The BIF limits at the time of this test for L/G, pH, and blowdown rate were 2.10 lb/lb, 8.10, and 3.30 gpm, respectively. If these parameters are identified as controls for PCDD/PCDF's, then the classification for this condition should either be 113 or WC.

Requested Action: Determine appropriate classification for 812C3.

Database Classification for 813C3 is U with the comment "Was FF operated at max T?".

Comment 84 The average inlet baghouse temperature for this condition was 410 F. The BIF limit at the time of this test was 445 F. The classification for this condition should be IB.

Requested Action: Change the classification for 813C3 to IB.

> EPA thanks Rubicon for this important piece of information. Changed classification to “normal” based on this information.

Liquid Boilers LVM Summary Spreadsheet

Database Sootblowing status for 813C3 is Unk

Comment 85 There was no sootblowing during this test condition for source 813.

Requested Action: Change the sootblowing status for 813C3 to N.

Liquid Boilers SVM Summary Spreadsheet

Database Sootblowing status for 813C3 is Unk

Comment 86 There was no sootblowing during this test condition for source 813.

Requested Action: Change the sootblowing status for 813C3 to N.
Liquid Boilers PM Summary Spreadsheet

Database Ash Spiking status for 812C2, 813C2, 814C2, and 815C2 are UL, L, UL and UL respectively.

Comment 87 There was no indication in either the July 2, 2002 NODA or the spreadsheet as to what the code UL, and L mean. There was no ash spiking during any of these test conditions for sources 812, 813, 814 and 815.

Requested Action: If necessary, change the ash spiking status for 5 812C2, 813C2, 814C2, and 815C2 to N.

> “UL” was used to indicate “unlikely”; “L” to indicate likely. Spiking status is changed to normal based on comment. However, the test condition classification is kept at WC

because the wet scrubbers and other system operating parameters were operated under worst case test conditions.

<u>Comment ID Nos. 30 and 31 – General Electric, GE Plastics</u>

<u>Comment Summary</u> – The commenter supplied more recent test report data for GE boiler ID Nos. 764 and 765. It also had comments on how the test conditions were classified (conditions for some HAPs were classified as worst-case when they were closer to normal operations).

<u>Comment Response</u> – The new test report data were added to the database. Classifications of the test data have been changed as requested.

<u>Comment ID Nos. 30 and 31 – General Electric, GE Plastics</u>

General Electric (GE) is pleased to submit comments (in triplicate) on NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) - Notice of Data Availability (NODA), published in the July 2, 2002 Federal Register (67 FR 44452) These comments apply to Docket Number RCRA-2002-0019. We have two comments

Previously submitted emissions data represents "normal emissions, not "worst case"

GE previously submitted comments dated August 21, 2000 concerning the GE boilers designated by EPA as #764 and #765. See Docket Number F-2000-RC2A-FFFF. Emissions data for these two GE boilers in the database are from the "Revised Recertification of Compliance of BIF Boilers H530A and H530B at GE Plastics February 1998". In this database, EPA has corrected all technical errors as requested by GE in our August 21, 2000 comments. However, EPA stated that the test conditions were at "max waste and ash feed", i.e., these emissions data represent "worst-case" emissions. See Condition Description field in database. GE respectfully disagrees.

During the Certification of Compliance testing, the waste fuel burned in the boilers was generated by the normal manufacturing process, i.e., no changes were made in the manufacturing processes that would change the composition of the tar. Furthermore, no materials were added ("spiked") to the waste fuel to alter its composition. Finally, the waste feed rate was at a normal level. In other words, the test conditions were a "snapshot" of a normal operations. Based on this, we conclude that this testing was conducted under "normal" operations and represents "normal" not "maximum" or "worst-case", emissions. GE requests that EPA change the designation on these entries in the database to "normal".

The same comment applies to another GE boiler, designated by EPA as #766. Emissions data for this GE boiler in the database are from the "Boiler and Industrial Furnace Compliance Test Report and Certification of Compliance - General Electric Plastics Plant, August 1998". Again, EPA has corrected all technical errors as requested by GE in our August 21, 2000 comments. Again, however, EPA states in the database that the test conditions were at "max HW feed rate", i.e., emissions data for this unit represent "worst-case" emissions. See Condition Descr filed in database. GE respectfully disagrees.

During the Certification of Compliance testing conducted on #766, the waste fuel feed to the boiler generated by the normal manufacturing process i.e., no changes were made in the manufacturing processes that would change the composition of the tar. Furthermore, no materials were added (“spiked” to the waste fuel to alter its composition. Finally, the waste feed rate was at a normal level. As with unit #764 and #765, we conclude that this testing was conducted under “normal” operations and represents “normal”, not “maximum” or “worst-case” emissions. GE requests that EPA change the designation on this entry in the database to “normal”.

GE is submitting additional emissions data that do represent “worst-case” emissions under certain conditions.

On July 28, 2001, GE again conducted Certification of Compliance testing on unit #764 and #765. During this testing, the waste fuel feed to boilers was spiked with titanium dioxide (TiO2) to increase the ash level in the waste fuel. This spiking resulted in significantly higher particulate emissions from the boilers. Key data from the February 11 & 12, 1998 and July 28, 2001 compliance tests follow:

Boiler	Date	Total Max. HW Feed Rate lb/hr/boiler	Total Max. Ash Feed Rate g/hr/boiler	PM Emissions (gr/dscf@7%O2)
H530A	2/12/98	4785	2776	0.035
H530B	2/11/98	4794	2554	0.035
H530A&B	7/28/01	4741	3875	0.078

Therefore, the July 28, 2001 emissions data represents the “worst-case” particulate emissions for these two boilers. We request that EPA add the emissions data from the July 28, 2001 testing to the database. To facilitate EPA’s inclusion of this data, enclosed are these (3) copies of the “Recertification of Compliance, September 2001" without the appendices as submitted to the U.S EPA Region V.

Comment ID No. 32 – Ciba Specialty Chemicals

Comment Summary – Provided comments relating to Ciba incinerators, with comments supported by attached paper copies of portions of trial burn reports.

Comment Response – Changes were generally made as requested. Responses are included below in blue underlined text for some issues as appropriate.

Comment ID No. 32 – Ciba Specialty Chemicals

Ciba Specialty Chemicals Corporation (Ciba SC) is pleased to offer these comments on EPA's Notice of Data Availability concerning the databases EPA plans to use to propose National Emission Standards for Hazardous Air Pollutants for hazardous waste burning combustors. Ciba SC is a leading global specialty chemicals company dedicated to producing high-value effects for our customers' products. With a hazardous waste incinerator at its McIntosh, Alabama chemical manufacturing facility, Ciba SC would be directly affected by the proposed rulemaking. (1) Ciba Specialty Chemicals consists of five business segments -- Coating Effects, Home & Personal Care, Plastic Additives, Textile Effects, and Water & Paper Treatment. With its US operations headquartered in Tarrytown, NY and having approximately 3,000 employees throughout the U.S. and Canada, Ciba Specialty Chemicals North America is part of the worldwide Ciba Specialty Chemicals group, a company with 2000 sales of $4.7 billion, in 120 countries, and 20,000 employees. The U.S. is Ciba's largest single market, accounting for nearly one-third of global company sales. Worldwide headquarters are in Basel, Switzerland.

The following comments pertain to the accuracy and completeness of the information about Ciba SC's hazardous waste combustion operations in the U.S. contained in EPA's database.

Comment No. 1

All data for the source with Phase I ID No. 705 (Ciba-Geigy Corporation, Multipurpose Incinerator, McIntosh, AL) should be deleted from the database. (This includes an individual source data sheet and entries in the PM, Hg, SVM, LVM, and HCl/Cl2 data summary sheets.) This source stopped burning hazardous waste on June 30, 1998 and has undergone closure.

> Unit has been identified as no longer burning hazardous waste and removed from the data base.

Comment No. 2

The facility name corresponding to the source with Phase I ID No. 490 (Hazardous Waste Incinerator No. 2, McIntosh, AL) has been legally changed from Ciba-Geigy Corporation to Ciba Specialty Chemicals Corporation. This would be a global change for Source 490 throughout the database.

Comment No. 3

The air pollution control system (APCS) description for Source 490 is incomplete. The APCS components noted in the "Source Description" section of the individual source data sheet, and in the PM, Hg, SVM, LVM, and HCl/Cl2 data summary sheets, are the spray saturator (SS) and the packed bed scrubber (PBS). The APCS of Source 490 consists of four separate stages: a spray saturator, an initial venturi scrubber, a packed bed scrubber, and a final venturi scrubber. Therefore, Ciba SC suggests changing the APCS designation from SS/PBS to SS/VS/PBS/VS.

The spray saturator immediately follows the afterburner and is a quick-quench device. It rapidly cools the combustion gases from a nominal operating temperature of 1800°F to the adiabatic saturation temperature of approximately 182°F.

Both of the scrubbing stages on either side of the packed bed scrubber employ the proprietary Ring-Jet technology invented by Ciba-Geigy. The Ring-Jets are small, high-efficiency venturi scrubber units that promote intimate contact between particulate matter and scrubbing water to provide a high removal efficiency of sub-micron particles. They are the primary metals emission control devices for Source 490. The initial Ring-Jet scrubber and the final Ring-Jet scrubber each consist of a bank of multiple Ring-Jets, liquid injection manifolds, and chevron-type mist eliminators. All the Ring-Jets are manufactured the same size according to standard dimensions. The initial Ring-Jet scrubber contains 29 Ring-Jets and the final Ring-Jet scrubber contains 17 Ring-Jets.

The scrubbing liquid re-circulated through the packed bed scrubber is chilled below the temperature of the saturated combustion gases exiting the initial Ring-Jet scrubber by passage through a heat exchanger. This induces water vapor condensation and particle growth within the packed bed scrubber. The enlarged particles and droplets are subsequently easier to remove in the final Ring-Jet scrubber.

The "wet scrubber" process conditions shown in the "Process Information" section of the individual source data sheet correspond to the packed bed scrubber. Excerpts from the "Hazardous Waste Incinerator No. 2 Trial Burn Report" showing process conditions for the initial and final Ring-jet scrubbers are attached. Pertinent APCS operating data for test condition 490C1 are shown on pages 8, 9, and 10 from Section 4.0 of the report. APCS operating data for test condition 490C2 are shown on pages 11, 12, and 13 from Section 4.0 of the report.

Comment No. 4

The "Source Description" section of the individual source data sheet for Source 490 shows an average stack gas velocity of 19.7 ft/sec. This is incorrect. The stack gas velocity can range from 61 to 82 ft/sec while burning waste. A reasonable average value would be 75 ft/sec. The indicated average stack gas temperature is 167.7°F. This falls within the normal range of 165 to 185°F. A better average value would be 175°F.

Comment No. 5

There are two misplaced non-detect (nd) flags and five missing nd flags for the metals emissions data shown in the "Stack Gas Emissions" section of the individual source data sheet for Source 490. There should be no nd flag for the Run 2 nickel emission concentration result of 1.3 ug/dscm. (See attached page 22 from Section 3.0 of the trial burn report.) The Run 3 nickel emission concentration result of 0.7 ug/dscm requires an added nd flag, and the nd flag beside the Run 3 thallium emission concentration result of 0.2 ug/dscm should be deleted. (See attached page 23 from Section 3.0 of the trial burn report.) Finally, nd flags should be added next to the Run 4 emission concentration results for antimony (2.5 ug/dscm), selenium (5.0 ug/dscm), silver (0.2 ug/dscm), and thallium (0.1 ug/dscm). (See attached page 24 from Section 3.0 of the trial burn report.)

> No change made. Commenter did not realize that non-detect flags were placed to the left of the actual run value, not to the right.

Comment No. 6

The descriptors "solid" and "liquid" have been entered in the PM, Hg, SVM, LVM, and HCl/Cl2 data summary sheets to characterize the Source 490 hazardous waste feeds. Besides liquid waste, the only other waste material burned in Source 490 was (and continues to be) pumpable sludge from Ciba SC's McIntosh, AL facility biological wastewater treatment system. Perhaps the descriptor "sludge" should be used in place of "solid" to describe this material.

Comment No. 7

The descriptions of test conditions 490C1 and 490C2 for Source 490 are entered correctly in the PM data summary sheet, but not in the Hg, SVM, LVM, and HCl/Cl2 data summary sheets. The correct description for test condition 490C1 is "Trial burn, high kiln exit temperature, metals spiking." The correct description for test condition 490C2 is "Trial burn, low kiln exit temperature, DRE."

Comment No. 8

There is an entry of "UL" in the Hg data summary sheet for Source 490 indicating that it is unlikely that mercury was spiked into the waste feeds during the trial burn. Mercury was definitely not spiked into the waste feeds during the trial burn, so this entry can be changed from "UL" to "N" (for no spiking).

Comment No. 9

The SVM data summary sheet for Source 490 incorrectly indicates that lead was spiked into the waste feeds during the trial burn. Although cadmium was spiked into the waste feeds, lead was not. Therefore, the entry in the lead spiking column needs to be changed from "Y" to "N," and the test for SVM emissions control should be characterized as "in between" (IB) normal and worst-case, rather than as "worst-case" (WC).

Comment No. 10

A second Source 490 trial burn was performed in April 2000. Data from this trial burn are not included in the database. The April 2000 trial burn included a DRE test, measurements of PM, SVM, LVM, Hg, and HCl/Cl2 emissions, and measurements of dioxin/furan emissions. A report entitled "Hazardous Waste Incinerator No. 2 Trial Burn Report of Results, Ciba Specialty Chemicals Corporation, McIntosh, Alabama, July 2000" was submitted to the Alabama Department of Environmental Management (ADEM) and to EPA Region 4 on August 2, 2000.

A copy of this report was obtained and entered into the revised HWC database.

Comment ID No. 33 – OXY Vinyls, Inc.

Comment Summary – Provided comments on the data for Oxy Vinyl Deer Park TX incinerator unit ID No. 3028.

Comment Response – Made changes as requested.

Comment ID No. 33 – OXY Vinyls, Inc.

Oxy Vinyls, L.P. - Deer Park VCM Plant is providing comments in response to the Notice of Data Availability (NODA) published in the July 2, 2002 *Federal Register* regarding the Standards for Hazardous Air Pollutants for Hazardous Waste Combustors. We have reviewed the data bases referenced in the NODA and have discovered an error. On the page listed as "5, feed, 3028" the stack flowrates for 3028C2 (Trial burn worst-case PM/HCI/Met) listed on line 44 and the Oxygen percent listed on line 45 are incorrect. The flowrates listed on line 44 and oxygen percentages on line 45 are for 3028C1 (Trial burn - min temp/DRE/%02). The correct flowrates and oxygen contents for 3028C2 are as follows:

Run #	Stack Gas Flowrate (dscfm)	Oxygen (%)
R1	6177	6.5
R2	6330	6.7
R3	6295	6.4
Average	6267	6.5

Attached is page 5 for Phase I ID No. 3028 with the incorrect values marked out and the corrections added to the data.

Comment ID No. 34 – Rhodia, Inc.

Comment Summary – Commenter agrees with the data on sulfuric acid furnaces contained in the previous Phase II database; and agrees with EPA that sulfuric acid furnaces are adequately handled under existing RCRA BIF regulations and that no MACT rule is needed for sulfuric acid furnaces. Comments also include new trial burn data from sulfur acid furnaces.

Comment Response – None necessary.

Comment ID No. 34 – Rhodia, Inc.

Re: Docket Number RCRA-2002-0019
NESHAP: Standards for Hazardous Air Pollutants
For Hazardous Waste Combustors (Final Replacement Standards and Phase II-Notice of Data Availability)

To The Docket Clerk:

Rhodia Inc. submits these comments on EPA's Notice of Data Availability published in 67 Fed. Reg. 44452 (July 2, 2002). Rhodia understands that these data will be used to develop final Phase I Hazardous Waste Combustor (HWC) MACT "Replacements Standards" for hazardous waste burning incinerators, cement kilns and lightweight aggregate kilns, and Phase II HWC MACT standards for hazardous waste burning industrial and institutional/commercial boilers, process heaters, and hydrochloric acid production furnaces.

Rhodia is one of the world's leaders in specialty chemicals, providing products and services to the automotive, electronics, personal care, petrochemical and environmental markets. As a Responsible CareR company, Rhodia is committed to meeting the challenge of producing and marketing products in ways that are safe and environmentally responsible by:

- Fostering environmental awareness in the entire product life cycle.
- Managing waste and effluent disposal effectively.
- Controlling technological risk and accidental pollution.
- Communicating openly with our neighbors and the public.

By following these guidelines and in keeping with our commitment to Responsible CareR, Rhodia has achieved substantial reductions in emissions to air, land and water.

Rhodia is submitting these comments because Rhodia's Eco Services enterprise is the US and world leader in sulfuric acid regeneration. In addition, Eco Services is a major manufacturer of sulfuric acid, oleum and sulfur dioxide products for a wide variety of uses in the petroleum, chemical and petrochemical industries.

Rhodia's sulfuric acid regeneration service is carried out in seven Industrial Sulfur Recovery Furnaces within six facilities located at major industrial sites throughout the US. Our industrial furnaces are designed and operated to handle a broad spectrum of spent sulfuric acids. In addition, at three of those facilities (Houston, TX, Baton Rouge, LA and Hammond, IN), hazardous wastes are fed into the industrial furnace along with spent sulfuric acid, other sulfur-bearing raw materials and natural gas. The hazardous waste, which represents about ten to twenty percent of the total feed, has high energy value and effectively replaces some of the natural gas that these plants would otherwise need to use.

In the Federal Register notice, the EPA indicated that it does not anticipate proposing MACT standards for hazardous waste burning sulfur recovery furnaces, but rather to continue their regulation under the current RCRA rules at 40 CFR Part 266, Subpart H for permitted boilers and industrial furnaces (BIFs). The Agency further explains in Section III of the Notice: *"We do not believe that MALT standards are warranted for these sources because available emissions data indicate that emissions of hazardous air pollutants are very low."* 67 Fed. Reg. at 44455 (July 2, 2002) (emphasis added).

Rhodia concurs with EPA's conclusion and its decision to allow *"sulfur recovery furnaces burning hazardous wastes other than spent sulfuric acid"* to *"remain subject to the BIF rule"* for air emissions. *Id.* Rhodia commends the Agency for recognizing the fact that our chemical processing, sulfur recovery furnaces are currently regulated in an environmentally sound manner, and

that no further regulation of air emissions under a MACT standard is necessary.

In support of this conclusion, Rhodia notes the following: As a result of the production process and regulation under the BIF rules, none of Rhodia's sulfuric acid plants are "major" HAP sources pursuant to section 122(a)(1) of the Clean Air Act. 42 U.S.C. § 7412(a)(1). Moreover, emissions from the facilities are so low that their regulation would not be warranted as area sources under section 112(c)(3) of the Clean Air Act. 42 U.S. C. § 7412(c)(3).

The sulfuric acid regeneration process is inherently efficient at reducing potential hazardous air pollutants that might be emitted from the process. The industrial furnace into which spent sulfuric acid and hazardous wastes are fed is followed by a series of units that each are designed to eliminate contaminants in the process in order to produce sulfur-containing process gases that are cooled, dried, reacted and converted to the sulfuric acid product as they move through the production process. Following combustion, the process gas is conveyed through a quench tower, a direct contact gas cooler, two electrostatic precipitators in series, a drying tower, a four-stage catalytic conversion process to oxidize the process gas, an absorbing tower, and finally a mist eliminator. Only then do emissions exit a stack. In other words, the process is closed with no emissions until the stack at the very end of the production process. This production process results in a process gas stream containing sulfur trioxide, which is effectively scrubbed from the gases to produce various strengths of sulfuric acid and oleum.

As requested by EPA in the July 2002 NODA, Rhodia has reviewed the data files from the June 27, 2000 NODA (65 FR 39581) incorporating trial burns at its Houston, Baton Rouge, and Hammond facilities. We believe the data files accurately reflect the results of performance testing during the trial burn. However, given late summer conflicts, we reserve the ability to further scrutinize these tables and will provide additional information to the agency shortly if any discrepancies are noted.

Rhodia also wishes to supplement the enclosed data files with data from the 1996, 1997 and 2001 trial burns at Rhodia's Houston sulfuric acid regeneration plant. *See* attached data summary and tables. The Houston plant is one of the three Rhodia plants where hazardous waste is burned, and

its emissions would be typical of the other two plants. The stack test results yield an emissions estimate of 0.24 - 1.84 tons per year of detectable organics and metal HAPs. (1) These data, as well as the data already in the record and the explanation above of Rhodia's closed process, support EPA's decision that it is not necessary to regulate these facilities under the HWC MACT rule.

(1) Our calculation of the emissions at the stack represents the average of the three test runs for all detectable organics (HAPs and non-HAPs, and including dioxins/furans) and for all HAP metals. For the organic emissions, testing was conducted in two different operating modes - Mode A at 2127° F and Mode B at 1884° F. Metals data represent emissions at 1856° F. Actual operation is an average 1990° F. The test results were multiplied by 8760 hours per year. This is overly conservative since it assumes that hazardous waste is fed into the furnace continuously and the furnace operates 365 days a year.

We would like to thank you for the opportunity to submit these comments on the EPA's Notice of Data Availability. If you have any question, please contact the undersigned at (732) 821-3481.

Respectfully submitted,
John E. Klepeis
Director, Strategic Planning
Attachment

Comment ID No. 35 – Eli Lilly and Company

Comment Summary -- Comment contained a new trial burn report, as discussed in Comment ID Nos. 15 and 16.

Comment Response – New report has been added to the revised HWC database.

<u>Comment ID No. 36 – Coalition for Responsible Waste Incineration</u>

<u>Comment Summary</u> – Commenter has various general concerns about the contents and potential use of the HWC database.

<u>Comment Response</u> – See responses below contained in blue, underlined type.

<u>Comment ID No. 36 – Coalition for Responsible Waste Incineration</u>

The Coalition for Responsible Waste Incineration (CRWI) is pleased to submit comments on the proposed database noticed in NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) - Notice of Data Availability (67 FR 44452, July 2, 2002). CRWI represents 27 companies with hazardous and solid waste combustion interests. These companies account for a significant portion of the U.S. capacity for hazardous waste combustion. In addition, CRWI is advised by a number of academic members with research interests in hazardous waste combustion. Since its inception, CRWI has encouraged its members to reduce the generation of hazardous waste. However, for certain hazardous waste streams, CRWI believes that combustion is a safe and effective method of treatment, reducing both the volume and toxicity of the waste treated. CRWI seeks to help its member companies both to improve their operations and to provide lawmakers and regulators helpful data and comments.

CRWI has several general concerns about the database. While not being able to fully examine the database, several potential discrepancies have been observed. There may be explanations but the short comment period will preclude pursuing answers. We are also concerned about commenting on the database without knowing the method used to analyze the data that is included. However, we will continue to work with the Agency to get to a database that can be used to develop the permanent replacement standards.

Some of the confusions have been cleared up after consultation with Agency staff. For example, an incinerator operated by Lilly was deleted in the current database because staff understood that it had stopped burning hazardous waste. That is not the case and Lilly personnel will respond appropriately. However, the concern is that Agency staff used circumstantial evidence rather than confirming the information with facility staff. CRWI suggests that the reason for removing any facility from the database be re-examined and documented to ensure that the logic for the action is based on fact. There are other confusing issues in the database. One example is why certain facilities have multiple data (old and new) while others have only the newest test results. There may well be a logical explanation for this but the NODA, the database, and other support documents do not address why individual actions were taken. Another point of confusion is why does the Safety-Kleen Deer Park facility have four Phase I ID numbers (221, 488, 489, and 609) when they have two trains using a common stack. Does this mean that EPA considers them four different units at the same location? Other locations have found multiple errors in their individual data sheets. While these will be reported by those facilities, we suggest that EPA re-check all data not confirmed or corrected by individual facilities. We realize that EPA has time constraints to develop the permanent replacement standards. However, the Agency has to develop a correct, consistent database from which to develop these new standards. Failure to achieve this will put the Agency right back in its current situation some time in the future.

Prior to the NODA, EPA made an exhaustive effort to collect and enter into the database all reasonably available trial burn and Comprehensive Performance Tests (regardless of test date) for all types of hazardous waste combustors. Additionally, the NODA provided an opportunity for reports that were not collected to be submitted and added to the database.

Hazardous waste combustors that were not included because they were determined to be not operating or would not be operating at the time of the proposed Replacement HWC MACT Rule will be included back in the revised database as appropriate. For example for the Eli Lilly unit, see Comment ID Nos. 15/16 for EPA's response to this issue (this unit was added back into the data base).

Regarding the Safety Kleen Deer Park TX unit, this unit is assigned 4 different ID Nos. because over the years, testing has been performed on various configurations of different kilns and air pollution control devices that have been added to this site. A separate ID No. is given to testing conducted under each different configuration. Unit ID No. 609 represents the current configuration (the most recent testing).

CRWI is also concerned that the current database contains data from facilities that have already upgraded to meet the interim standards. This is effectively MACT of MACT. We do not believe that this is what Congress intended when the 1990 amendments were passed. It also punishes facilities that are complying early while rewarding the facilities that wait. Early compliance is beneficial for the environment by reducing emissions before they are required. That behavior should be rewarded instead of being punished. CRWI does not believe that EPA should follow such policies.

See response to Comment ID No. 27.

In an effort to address these issues, CRWI suggests that EPA develop one database that has all data in it. This would include old, new, before and after configuration changes, etc. However, not all this data is appropriate for use in developing individual standards. EPA needs to develop a consistent method of choosing the data to be used to determine the standards for each individual pollutant (see our specific comments on suggested criteria). A full explanation of the process is necessary. Currently, for many facilities, the database only includes recent (year 2000 and/or 2001) test burn results.

The old NODA data base, and revised data base, is exactly the data base which the commenter is recommending. See the proposed Replacement HWC MACT Rule for detailed discussion on procedures and data used to determine the MACT replacement standards.

In addition, we suggest that all possible subcategories be developed and included. Until the exact method of analysis is decided; it can not be know exactly how the data will be re-arranged. Eliminating or not including subcategories could result in improper analysis of the data. Because the contents of the database and the method of analysis are so linked, we believe that it is not appropriate to eliminate data until the method of analysis is defined.

> <u>The data base contains all information drawn from the test reports. No data have been eliminated from the raw data base.</u>

Specific Comments

CRWI's specific comments are based on the questions asked in the NODA.

1. Are all sources included?

CRWI is concerned that certain sources from the 1996 data base were deleted for no stated reason (e.g., a rotary kiln incinerator at Lilly-Clinton and a liquid incinerator at Lilly-Lafayette). Upon further discussions with the agency, it was determined that EPA thought these units would be closed and as such did not include them in the revised data base. However, section VI. A. of the federal register notice states that "the data bases do not include information from sources no longer burning hazardous waste" and .... we conclude that data from currently operating combustors are adequate." The *Federal Register* criterion is distinctly different than what EPA apparently practiced in developing the database. In addition to apparent inconsistent criteria being applied, CRWI is not sure how EPA gathered the information used to base its decisions on which sources should be included in the data base. We suggest that EPA re-examine the reasons for removing any facility from the database to make sure the reason is documented and in accordance with established criteria. Relying on a rumor that the facility is closing should not be sufficient to remove that data from the database. If there is any doubt, EPA should call the facility and verify the information. This should not be difficult. To assist in this endeavor, CRWI will help determine appropriate contacts at facilities wherever possible.

> <u>See various responses to these general comment in previous comments; specifically Comment ID Nos. 15/16, ID No. 19, and ID No. 27.</u>

2. Are there sources that should be deleted?

a. Generic Concerns on Analytical Methods.

CRWI finds it difficult to determine what data should be included and what data should be excluded until the analysis method is known. CRWI believes that the elimination of data prior to establishing the analysis method may lead to a biased data set, something everyone is trying to avoid. After going around in circles several times on what data to include, finding it depended upon the analysis method, we decided that the most logical method would be to include all data for all sources. This would include multiple data runs for each facility, regardless of when the data was taken. When an analysis method is chosen, then each data line can be examined to determine if should be used in that analysis (e.g., if the means for "normal" conditions are used, all other data should be excluded). Thus, we would advocate that all data be included and care be taken in creating potential subcategories for each line of data. This would allow easy sorting of the data so the analysis step would not become awkward.

> No data have been eliminated from consideration. The data have only been classified / rated into well defined categories (including normal, worst case, in-between, etc.). See the proposed Replacement HWC MACT Rule preamble and background documents for a detailed discussion on rating procedures.

b. Specific Concerns Regarding Chemical Weapon Demilitarization Facilities

Beyond the above generic concerns, CRWI does believe there is one group of incinerators that should have its own subcategory - Chemical Weapon Demilitarization Facilities (CWDFs) - i.e., incinerators specifically designed to handle stockpiled chemical agents coupled with propellants and/or energetics (explosives). Congress has mandated that this unusually dangerous feedstream should be disposed of only at stockpile sites under conditions more stringent than imposed by the Clean Air Act. For instance, in contrast to the MACT "cost-sensitive" equation aimed at measuring the performance of an industrial source category (see Senate Report 101-228 at 168-169), CWDFs are designed and operated to meet the more stringent Congressional mandate of 50 U.S.C. §1521(c)(1), which provides that in carrying out the Chemical and Biological Weapon Program, the Secretary of Defense "shall provide for:

(A) maximum protection for the environment, the general public, and the personnel who are involved in the destruction of the lethal chemical agents and munitions ...; and
(B) adequate and safe facilities designed solely for the destruction of lethal chemical agents and munitions."

For the CWDFs, not only is cost consideration absent from their statutory mandate, but Congress has also specifically directed that these facilities cannot be turned to more traditional hazardous waste combustion once the demilitarization mission is completed. In other words, this explicit Congressional prohibition segregates CWDFs from the rest of the hazardous waste combustion universe, a distinction that should be reflected in the final hazardous waste combustion MACT standards.

Beyond these legal distinctions, it is noteworthy that air emissions from all CWDF incineration facilities are subject to site-specific risk assessments through their State RCRA permits, a distinction that is generally recognized by EPA as placing a facility outside of MACT jurisdiction. See *NESHAPS: Final Standards for Hazardous Air Pollutants for Hazardous Waste Combustors; Final Rule,* 64 Federal Register 52827, 52840-52843(Sept. 30, 1999). Also, demilitarization of the United States' chemical weapon stockpile is driven by international treaty obligations, making this subcategory of the combustion universe uniquely temporal and more reflective of international security and local safety concerns than "achievable" performance standards set by other long-term hazardous waste combustors.

Even as early as its 1994 Combustion Strategy, EPA recognized that chemical weapon demilitarization is a unique activity not typical of the hazardous waste combustion universe. *See Strategy for Hazardous Waste Minimization and Combustion,* at §V(A)(2). EPA was correct then, and should carry its first impression of CWDFs into action now. Since September 11, 2001, the demilitarization of chemical weapons has taken on a new urgency. CRWI believes that development of realistic hazardous waste combustion MACT standards includes recognition that chemical weapon demilitarization is not a typical activity of the hazardous waste combustion source category. This distinction would remove legally inapplicable data from the overall MACT pool, and focus EPA's attention on reconciling its MACT expectations with the international resolve to rid the world of chemical weapons.

Based on the above premises, CRWI believes that CWDFs are a separate class of incinerators that should not be included in the same category as other hazardous waste incinerators.

> <u>EPA agrees that chemical weapons disposal incinerator facilities should be considered potentially as a separate subcategory or separate class of incinerators. See the proposed Replacement HWC MACT Rule for a detailed evaluation of the subcategories considered for the MACT floor standards for incinerators.</u>

3. Is the data for each source accurate and complete?

CRWI believes that the individual facilities are much better equipped to examine the data and report potential errors in the database and as such will leave it to the individual facilities to develop responses to this question.

4. Do we have comments on EPA's data handling procedures? a. Non-detects?

As a part of their comments submitted on the Phase II database, Eastman Chemical Company pointed out that EPA was not properly handling data that was reported as "less than." In their response to comments document, EPA dismissed these comments stating that this was not the normal and would not impact the resulting standards. The concern that Eastman pointed out was that a certain method of reporting would lead to substantial underestimation of test results. To illustrate this point, please consider the following example. The front half of a train detected 100 ppm of pollutant X but that pollutant was not detected in the back half of the train. For this example, consider that the detection limit is 5 ppm. This data would be reported as "less than 105 ppm." If the entire 105 value is taken as the non-detect level and 1/2 is used, the results in the database would be 52.5 ppm, which is not accurate. A more accurate method would be to take half the detection limit from the back half of the train (2.5 ppm) and add the two giving a value of 102.5 ppm. This is a significant departure from taking half of the entire sum and could result in significantly different standards. CRWI suggests that this concern is not isolated but is the normal way data of this type is reported. In fact, what Eastman pointed out is exactly what EPA recommended in their risk burn guidance document

(Risk Burn Guidance for Hazardous Waste Combustion Facilities EPA 530-R-01-001, July 2001). The following is taken from pages 168-9 of this guidance document.

"For data reporting to support site-specific risk assessments at combustion facilities, the following reporting convention is recommended when the results from each sampling train have to be summed to arrive at a total train mass-

- If results for all fractions are non-detect, then the full RDLs (or EDLs) should be summed and the results reported with a 'less than' sign;
- If a constituent is detected in some of the train fractions but not in others, then the data should be reported as a range (i.e., 'greater than' the total amount, but 'less than' the total detected amount plus the full RDLs or EDLs for the non-detects). ..."

To get a better idea of common practice in this matter, CRWI asked members how this is handled in the field. We consistently received the answer that the recommendations in the trial burn guidance are followed. Thus, we do not believe that this is an isolated incident but is pervasive throughout the database. CRWI suggests that it is necessary for EPA to re-examine each value reported as a "less than" number and revise the value in the database to properly reflect what the test actually showed.

This guidance also points out that detection limits are defined a number of different ways and are not always consistently reported (see page 168). Given that non-detects are often defined differently and reported differently, CRWI also suggests that EPA examine the database to make sure the same definition of non-detect is used in every instance. If non-detects are used in the database, all values must be included using a consistent definition for non-detects.

In addition, we believe that the Agency should carefully examine the data to determine what role non-detects will play in the development of the permanent replacement standards. CRWI does riot believe non-detects in the database should drive the standards. If they do so, it would make it very difficult to ever show compliance with a standard that is based on a detection limit or $^1/2$ the detection limit. Finally, we would like to point out that the method of developing the standard should be consistent with the test methods for complying with the standard and that no standard should be driven by non-detects.

<u>See detailed reponse to this issue in Comment ID No. 15/16 (Issue No. 5)</u>

5. Can we fill in data gaps?

a. Fill in missing source description information

CRWI believes that individual facilities are better equipped to address this question.

b. Is the data from worst-case or normal operations?

CRWI believes that individual facilities are better equipped to address this question.

c. Whether metals data were extrapolated of interpolated?

CRWI believes that individual facilities are better equipped to address this question.

d. Were metals surrogates used?

CRWI believes that individual facilities are better equipped to address this question.

e. Are EPA's new data fields accurate?

1) Classification of the design and operation of the source

After much discussion, CRWI decided that all possible sub-categories should be included in the database. This was based on the concept that once added, the sub-categories do not have to be used but if they are not added during the comment period for the NODA, it may not be possible to add them later. In addition, until the analysis method is chosen, it is impossible to determine what potential subcategories should be included. Thus, CRWI would like the Agency to consider the following possible subcategories for each of the pollutants for incinerators.

PM
Liquid v. solid Wet v. dry
Chem demil v. all others
Waste heat boilers (WHB) v. non-WHB Ash feed rate

Mercury
Carbon v. non-carbon
Chlorine feed rate
Chem demil v. all others
Mercury feed rate
Sulfur feed rate

SVM
Liquid v. solid
Wet v. dry
Feed rate
Chlorine feed rate
Physical form of the feed
Chem demil v. all others

LVM
Liquid v. solid
Wet v. dry
Feed rate Chlorine feed rate

Physical form of the feed
Chem demil v. all others

Chlorine
Wet v. dry
Feed rate
Total v. HCI (oxidizing v. reducing environment)
Chem demil v. all others

D/F
WHB v. non-WHB
Wet v. dry
Carbon v. non-carbon
MAC T of MACT
Liquid v. solid
Chem demil v. all others

Some of these subcategories overlap with the potential subcategories that EPA proposed in Table 1. We agree with all the potential subcategories in Table 1 and suggest that the possible subcategories above be considered in addition to the potential subcategories in Table 1.

> <u>These subcategories will be considered in the development of the proposed Replacement HWC MACT Rule. See the background documents and preamble.</u>

2) Classification of emissions as representative of highest or normal

While the Agency said that it would ignore comments on how the data should be used to set standards, it is virtually impossible to discuss how to define worst case or normal data without some discussion of how that data is to be used. EPA used three criteria for determining whether data was in one of several categories. CRWI agrees that if spiking is used, those test results might be worst case. However, this is not always correct. Consider the following scenario. Facility X enters into an agreement with their permitting agency to spike lead and cadmium at 1.5 times normal feed rates (but at a level below current permit limits) during the trial burn. This rate was chosen to reduce the amount of lead and cadmium that would be emitted during the trial burn and to reduce the chemical costs. After the results of the trial burn are received, the facility is allowed to upwardly extrapolate their feed rates to their individual permit limits. This facility did spike but the resulting emissions were not as high as if the facility would have fully spiked these two metals. Should that facility be allowed to extrapolate the emissions to their permit limits for the purposes of this database? That could be considered fair since they could have spiked to that level when running the tests but chose not to based on minimizing impacts on the environment. In addition, since SREs increase with increased feed rates (based on EPA's own research), how should including extrapolated results impact the use of SREs?

The second criterion used is a Tier III assumption under BIF. CRWI agrees that a Tier III assumption can be considered worst case.

The third criterion was high emissions. CRWI is not sure why this is included.

After much discussion, CRWI members suggested that a different (or perhaps additional) criterion may be more appropriate. This criterion is simple in concept but will take some work to apply. The concept is based on the purpose of each test. If a facility uses a test to establish permit conditions for a certain pollutant, it should be designated as such in the database and could potentially be designated as worst case. If that test is not used to establish permit conditions for that pollutant, it should receive a different designation such as normal. For example, a test condition where ash feed rates were maximized would be a good candidate for designation as worst case for the PM database but a test condition where DRE of a POHC with little or no ash feed should be designated as normal, even though PM concentration was measured. In addition, CRWI is not sure why all the "in between" categories are needed. Either a test is designed to establish permit conditions for a certain pollutant or it is not. There does not seem to be any real reason for any other subcategories based on the testing conditions. CRWI suggests that EPA go back through the data and determine the purpose of each test condition and use that information to properly designate each row of the database.

Should EPA decide to accept this suggestion, CRWI members will assist in this effort by applying this criterion to their own facilities.

> <u>It is not clear exactly what the difference is between the commenters suggested approach and that used by EPA for determining worst case and normal test conditions. EPA continues to use the “in-between” classification for conditions which are worst case in some aspect of design and operation but for a number of reasons is not determined as the worst case. See the proposed Replacement HWC MACT rule Background Document for a detailed discussion of procedures used to classify the test conditions.</u>

3) Characterization of soot blowing

The BIF rule requires that soot blowing be included in one run. It specifies how PM emissions are to be factored to account for soot-blowing. Most Certification of Compliance reports contain sufficient detail about soot blowing (e.g., which run, duration, calculations, etc.) for EPA to make this determination. CRWI believes that EPA should already have the data to make these determinations. Where data is missing, individual facilities are better equipped to make these corrections.

f. Make sure source categorization is accurate based on subcategories listed in Table 1.

CRWI agrees with the potential subcategories listed in Table 1. However, from the NODA, it is unclear exactly what these subcategories represent. Does a subcategory for waste heat boilers imply there is another category for non-waste heat boilers? Does this apply for all pollutants? CRWI suggests that EPA clearly establish criteria for designating each subcategory used. To make the subsequent analysis easier, CRWI suggests that EPA establish a data column for each potential subcategory and fill that column in for each facility. While this will take some effort at the front end, it will make the analysis step much easier. CRWI also suggests EPA consider the additional potential subcategories outlined in comment 5(e)(1).

<u>The various data categories and data classification flags contained in the NODA are intended to be used for evaluating different subcategories. See the proposed Replacement HWC MACT Rule background document and preamble for a detailed discussion of subcategories considered for determining the MACT standards.</u>

6. Do we agree with the agency's criteria for classifying data as worst case?

CRWI is concerned with the many different methods of classifying the data as worst case. The purpose of this classification is not clear. There have been indications that the Agency will consider variability differently for "worst case" than they will for "normal" data when determining the permanent replacement standards. CRWI is not sure how this can be done. Does this mean that EPA will only use "worst case" or "normal" data when setting the permanent replacement standards? If so, does this mean that "worst case" will be used for one pollutant and "normal" will be used for another? CRWI also fails to see how the "in between" categories can be used. It would be statistically difficult to use different variabilities when using a mixed set of "worst case" . and "normal" data to calculate the permanent replacement standards. Instead of using these criteria in setting the replacement standards, CRWI suggest that the Agency follow the suggestions outlined in section 5(e)(2) of our comments and use the reason for the test to include or exclude data for a particular analysis. However, we should make it clear that we believe that all data should be included in the database. Once in, choices can be made and explained as to what data is used for a particular analysis. However, if the data is not in the database, it can not be used in any subsequent analysis.

<u>As discussed above, all data are maintained in the database. Procedures for using and handling the data are discussed in detail in the proposed Replacement HWC MACT Rule preamble and background documents.</u>

7. Should only the most recent data be included or should all data from a source be included?

CRWI believes that all the data from a source should be "in" the database. However, CRWI believes the data from a given test condition is sometimes appropriate for the use in establishing one emission standards but not appropriate for the use in establishing other emission standards. For example, facility X conducted a trial burn years ago with 3 test conditions. Test condition 1 is designed to demonstrate DRE, test condition 2 is designed to demonstrate high chlorine feed rate and the compliance with a chlorine emission limit, as well as high metals feed and compliance with some specific metals emission rates, and a third test condition is a risk condition. It is appropriate to use the data that was designed to demonstrate compliance with the pollutant of concern to establish the emission standard for that same pollutant. For this hypothetical situation, CRWI believes that if metals or chlorine data were collected during test condition 1 (a DRE demonstration), it would not be appropriate to use the data for establishing the metals or chlorine standard. Test condition 2 data would be appropriate for establishing the chlorine and specific metals if that test was designed to demonstrate compliance for chlorine and metals. Test condition 3 may not be useful for any of the standards, depending upon the exact criteria for the test, but may be useful in determining variability.

Secondly, CRWI believes that some of the most recent data represents MACT of MACT for many pollutants. CRWI believes that Congress never intended for MACT of MACT data to be included in the pool of data used to determine the top 12% of existing sources. Section 112 (d)(3)(A) says, "the average emission limitation achieved by the best performing 12 percent of existing sources (for which the agency has information) excluding those sources that have, within 18 months before the emission standards is proposed or within 30 months before such standards is promulgated whichever is later, first achieved a level of emission rate of emission reduction which complies or would comply." The later of these two dates is March 30, 1997, based on the initial promulgation of the rule. The database is full of data from testing events well after 1997. Numerous examples exist from many facilities, where data was collected after the installation of WESPs to reduce metals and particulate emissions, carbon injection or carbon bed systems to reduce dioxin/furans and/or mercury emissions, even additional wet scrubbers have been added to reduce HCl/chlorine emissions. CRWI believes that the CAA is very clear, and the data from sources after the time period defined in section 112 (d)(3) was not intended to be part of the pool of data.

The legal loop on the duration for setting the MACT pool was closed by §112(d)(10), which provides that the MACT rule becomes effective upon promulgation by EPA. While §1 12(d)(6) authorized EPA to review and update its MACT standards and, presumably its MACT pool, EPA review of the MACT standards is statutorily restricted to changes prompted by "developments in practices, processes, and control technologies." Here, the only development prompting expansion of the MACT pool is judicial vacature of EPA's original rule. Section 112(d)(10) reflects Congress' intent to establish a regime of air toxic controls on predetermined source categories based upon industry performance on a date certain. In response to a judicial setback, EPA cannot arbitrarily slide that date forward to update the combustion MACT pool when (1) to CRWI's knowledge, the §1 12(d)(6) authority to review and revise MACT standards has never been invoked for any other source category; (2) EPA is still struggling to meet its baseline MACT promulgation mandate; and (3) the only hazardous waste combustion industry practices that have been changed from 1996 to present have been in anticipation of the effective date of the proposed MACT Rule.

Nothing in the statute addresses the current situation with the HWC MACT standards. While it could be argued that the 30 months would apply to the planned June 14, 2005 date, this would include data from facilities that had already upgraded to meet the interim standards. This hardly seerns fair to force facilities that have already upgraded to meet the interim standards to drive the standards setting for all facilities. This punishes the early compliers while rewarding the facilities that wait until the last minute. CRWI does not believe that this is a policy objective EPA should pursue.

No data have been excluded from potential use in the MACT analysis. See Comment ID Nos. 15, 16, and 19, for responses to most of these same issues. Also, procedures for using and handling the data when determining the HWC MACT standards are discussed in detail in the proposed Replacement HWC MACT Rule background documents and preamble.

Other Points

1. For mercury, it should be pointed out that few facilities spike mercury. This makes it very difficult to find appropriate data to set the emissions limits for mercury. It may be necessary to develop an entirely different method for determining the permanent replacement standard for mercury.

Special consideration is made when using emissions data from “unspiked”, Tier I, “normal” test data for setting MACT standards. This includes some (but not all) of the mercury data.

3.An additional point was made that certain facilities had data removed and others did not. For example WTI has data back to 1993 (pre and post carbon injection) while others have only the most recent data included. The Agency did not seem to be consistent in what data was included and what data was excluded. CRWI suggests that EPA include all data in the initial database. When the database is used to develop the permanent replacement standards, data can be examined and accepted or rejected (based on a consistent set of criteria) based on the method of analysis. It is impossible to know what data is appropriate to use until the method of analysis is decided. Thus, EPA must include all data collected. Elimination of data without knowing what the analysis method will be could create a biased dataset, something EPA needs to avoid.

As discussed above, EPA has not intentionally excluded or not collected HWC emission test data. In fact, actually the opposite is true. Much effort was invested in trying to collect all available HWC emission test reports. Finally, this NODA has served as a further opportunity for additional, missing data to be submitted and considered for the MACT rule evaluation.

3. EPA's mandate from Congress in the 1990 CAA was to establish "the average emission limitation achieved by the best performing 12 percent of the existing sources". CRWI believes and interprets this to mean top 12 percent of the existing facilities with equal weight to each facility. By taking averages of the entire pool of reported test conditions, facilities with more test reports and therefore more data points in the average are over-represented. Therefore, CRWI believes it is appropriate to establish one representative stack emission concentration for each pollutant or group of pollutants (SVM, LVM) for each facility. The process of determination of the standards should therefore first involve the inspection of the body of data. For each pollutant, the agency should look at the body of data for each facility and establish the most appropriate stack emission concentration.

Often this value should be the average of the results from several test conditions; however, the most appropriate and representative value may be the results from a single test condition. Included data should also be the results of a testing effort that was deemed collected with appropriate data QA/QC methodologies and that was collected with the objective of demonstrating compliance with the pollutant for which that standard is being established. In other words, the data should be quality and representative of a compliance test for the pollutant of concern. Any work process for determination of the average of the top 12% that includes multiple data points from any one facility is fundamentally flawed because it over-represents the representation of an individual facility. The flawed work process does not meet the mandate of Congress as set forth by Section 112 (d)(3).

CRWI believes that the Phase II database should not be limited to only the most recent data set. One challenge the agency faces is to determine how to account for variability as it develops MACT standards. Looking at the variability in emission results achieved during multiple tests of the same unit under similar operating conditions (as is the case with many COC tests) may provide valuable insight into normal emissions variability that may be experienced just due to routine operations variability, sampling variability, analytical variability, etc.

> Procedures for using and handling the data when determining the HWC MACT floor standards are discussed in detail in the replacement rule HWC MACT Background Document and preamble.

> EPA continues to limit the Phase II data base (boilers and HCl production furnaces) to data from most recently conducted test conditions. This data base has now been released for comment two times, is representative of current operations for just about all Phase II units, and as such is fully sufficient for determining HWC MACT standards.

4. During the last part of the comment period, CRWI has become aware that some of the calculations for percentage of non-detects may be suspect. While we have not had a chance to determine the extent of these potential errors, we would urge the Agency to re-check these calculations to make sure they are done properly.

> All comments provided on a reasonably timely basis have been considered in the revised data base. Further comment will be consider as part of the proposed Replacement HWC MACT Rule.

Comment ID No. 37 – American Chemistry Council

Comment Summary – General comments provided on how the data base should be used.

Comment Response – Responses are provided in blue underline type below each issue.

Comment ID No. 37 – American Chemistry Council

The American Chemistry Council is pleased to submit comments on NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) - Notice of Data Availability (NODA) noticed in the July 2, 2002 Federal Register (67 FR 44452). These comments apply to Docket Number RCRA-2002-0019.

The American Chemistry Council (ACC) represents the leading companies engaged in the business of chemistry. Council members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. The Council is committed to improved environmental, health and safety performance through Responsible Care°, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a $450 billion dollar enterprise and a key element of the nation's economy. It is the nation's largest exporter, accounting for ten cents out of every dollar in U.S. exports. Chemistry companies invest more in research and development than any other business sector.

We commend the Agency in viewing the publication of this NODA as a critical component of EPA's data quality assurance program. ACC recognizes that EPA's data quality guidelines will not come into force until October 1, 2002 and appreciates the Agency's proactive commitment to data quality in this rulemaking. The American Chemistry Council strongly supports the use of NODAs, among other things, as vehicles to correct any errors that might be present in data and information that will be used by the Agency in its decision-making. ACC also expects that the Agency will ensure that the data quality criteria of objectivity, utility and integrity are considered in the development of an appropriate methodology to set MACT (Maximum Achievable Control Technology) emission limitation standards for hazardous waste combustors.

While Council members strive to continuously reduce the amount of wastes they generate, many generate hazardous wastes incidental to the manufacture of chemicals, and manage some of those wastes via combustion in hazardous waste burning incinerators, boilers and industrial furnaces. Council members own and operate a significant number of the hazardous waste burning incinerators included in the NODA database. As such, the Council has a vital interest in ensuring that the database employed for the MACT rulemaking is complete and accurate.

ACC is concerned that the Agency (as part of this rulemaking) is developing MACT standards for hazardous waste burning industrial and institutional/commercial boilers, process heaters and hydrochloric acid production furnaces. As communicated to EPA previously, ACC believes that hazardous waste burning boilers are not a listed MACT source category or subcategory. If the Agency wishes to develop MACT standards for these units, the Administrator must first list these unit as a category or subcategory pursuant to the Clean Air Act (CAA), 42 U.S.C. § 7412(c)(5).

> Boilers and process heaters, and HCl Production Furnaces are source categories that the Agency has listed as including major sources of HAP emissions. Sources within these categories that burn hazardous waste are a class of sources for which the Agency is required to establish MACT standards.

Executive Summary

Individual member companies are reviewing the database as it relates to their own facilities, and are submitting detailed comments separately. Our comments consist primarily of general observations on the types of information reflected in the database. Key points raised in our comments below include:

- EPA should allow for further review of the revised database;
- EPA should be flexible in revising test condition classifications. as it proceeds through the rulemaking process;
- The database should be supplemented with fields that delineate the constituents each test was intended to evaluate;
- Emissions data from sites with air pollution control devices upgraded for the 1999 MACT rule should be identified in the database;
- EPA's methodology for calculating LVM and SVM metals concentrations still understates the true value when constituents are not detected;
- EPA should consider additional subcategories, and
- Data for all sources currently authorized to burn hazardous waste should be retained in the database.

We appreciate this opportunity to work with the Agency to establish an appropriate database for the MACT standards. As detailed in the balance of our comments, there are a number of important issues to be resolved. We look forward to working closely with the Agency both on this database and the development of an appropriate methodology to establish MACT standards for hazardous waste combustors.

EPA Should Allow for Further Review of the Revised Database

EPA has allowed only 45 days for review of and comment on the revised NODA database. The NODA database is large and complicated: it is separated into 36 summary files and more than 200 detailed files, each contained in individual spreadsheets with multiple spreadsheet pages. We are assisting member companies in trying to locate their data and assessing EPA's assignment of the classification flags. Members have reported difficulty in accessing the detailed data files made available on EPA's web site. The short time-period allowed for review and comment on the NODA database does not allow for thorough review by all affected parties. Because an accurate database is critical to the rulemaking process, and there have been data access problems, the Agency should make clear its intent to review comments submitted after the August 16, 2002 comment deadline for this NODA and to incorporate associated corrections into the database. The Council will work closely with our members to thoroughly review the database, and we will make every effort to have members notify EPA of any additional comments on the database by October 1, 2002.

> The HWC NODA Database was clearly organized and presented and should not have provided any problem for review. It was available in both a universally recognizeable PDF (portable document format) format, or in a standard spreadsheet software computer format that is comptabile and accessable through a number of database software programs (including Excel, Lotus, Quatro, etc.). In was easily accessible through the EPA website. None-the-less, all comments received so far have been incorporated into the revised data base, included a couple submitted after the comment due date. Additionally, the replacement proposed HWC MACT rule will provide a further opportunity for comment on the database, and the use of the data.

EPA Should be Flexible in Revising Test Condition Classifications as it Proceeds Through the Rulemaking Process

In the database, EPA has included (and requested comment on) data comment fields that attempt to classify, on a pollutant-specific and test-specific basis, the conditions under which each test was performed. The Agency presumably will use these classifications to help make subcategorization decisions and to evaluate emissions variability. We believe the content of these comment fields is critical to the rulemaking process. We strongly support the Agency in recognizing the importance of characterizing test data to help determine whether the data are appropriate for various standards setting options. However, because EPA has not yet explained the details of the emissions standard-setting process that will make use of these classifications, it is difficult for us to assess either the validity of the classifications, or how they will ultimately be used when setting the emission standards. We therefore reserve the right to submit additional comments on the classifications after the standard-setting process is more fully developed. As all parties gain a better understanding of the meaning and role of these classifications, the Agency should allow the test condition classifications in the database to be subject to revision and correction based on comments received during this rulemaking.

> <u>EPA agrees that the test condition classifications continue to be refined as the test conditions and report information are further scrutinized. Additionally opportunity for comment on how the data have been used and classified will be available as part of the proposed Replacement HWC MACT Rule.</u>

The Database Should be Supplemented With Fields that Delineate the Constituents Each Test was Intended to Evaluate

As mentioned above, the Agency has made laudable efforts to classify emissions test data as normal, worst-case etc., based on what is known about test conditions. A primary reason to make such classifications is to ensure that an emission standard is achievable. In previous comments and in informal conversations with EPA personnel involved in developing the NESHAP standards for hazardous waste combustors, ACC and its members have made clear our concern that a MACT standard based on the use of inappropriate data (e.g., in a case where the constituent measured was not present in the waste fed to the system) will likely be unachievable, even by most or all of the sources whose data were used to set the standard. To address the issue of which data are appropriate to use in setting a particular standard, we recommend that the database be supplemented with fields that characterize which parameters each individual test was intended to evaluate (e.g., whether the test was meant to measure the emissions of and set a permit limit for the specific parameter). This supplemental field could exist alongside appropriately considered "worst-case" or "normal" flags assigned with the intent of measuring variability. ACC and its member companies are willing to assist EPA in a comprehensive review of the database to incorporate such a field.

> EPA does not see how the suggested additional flag would provide any further information. The NODA data base and revised data base test condition classification scheme serves to directly identify whether the test condition was used for permit setting purposes – in fact that is a primary determining factor in making the classification decision.

Emissions Data from Sites With Air Pollution Control Devices Upgraded for the 1999 MACT Rule Should be Identified in the Database

The NESHAP rulemaking process for hazardous waste combustors has a long history. The standards for Phase I were originally proposed in April 1996, finalized in September 1999, and replaced with the current interim standards in February 2002, with a compliance date of September 2003. During the rulemaking process, sites regulated under RCRA were conducting periodic performance tests while monitoring the regulatory development process for the upcoming NESHAP rule. Subsequent to proposal of the since-vacated Phase I Rule, many sites upgraded their air pollution control devices to meet the expected MACT standards. In the current NODA database, EPA has included numerous results from emissions tests conducted after proposal of the Phase I rule, some of which reflect upgrades undertaken for compliance with the September 1999 MACT rule.

ACC believes that Congress never envisioned a two-step, "MACT of MACT" process where a second set of MACT standards would be established based on data from sources that had upgraded to meet the former, and subsequently vacated MACT standards (the precise situation for the Phase I MACT). The Clean Air Act's MACT provisions were intended to establish a program in which MACT standards would be promulgated by a date certain for categories of sources, after which EPA would consider further reductions (if necessary) through broader residual risk rulemaking. Congress did not envision the current situation in which a second round of MACT standards would be developed on the heels of an initial MACT rule for which sources were required to comply.

We request that the EPA modify the database to clearly identify emissions data from sources that have upgraded air pollution control devices for the 1999 MACT rule. This classification will assist the Agency in ensuring that future MACT standards are not inappropriately skewed by facilities that upgraded for the 1999 MACT rule. It would not be equitable, or consistent with Congressional intent, for the second (and near-term) round of MACT standards to be made excessively stringent because of data from facilities that recently upgraded to meet what they understood to be the final MACT standard (i.e., the emission standards in the September 30, 1999 MACT rule).

> Test conditions associated with changes in air pollution control devices are identified in the test condition classification comments flag. Procedures for the consideration of these data are discussed in detail in the proposed Replacement HWC MACT Rule background documents and preamble.

EPA's Methodology for Calculating Low Volatility Metals (LVM) and Semi-Volatile Metals (SVM) Concentrations Still Understates the True Values When Constituents are Not Detected

During our review of the June 27, 2000 NODA database for hazardous waste boilers, ACC commented that review of the test data indicated that the methodology employed to estimate the concentration of constituents in emitted stack gas underestimated the true levels. This same erroneous methodology is again being used for boilers and incinerators in the current (July 2, 2002) NODA database. In continuing to make this obvious error in calculating constituent concentrations, the Agency is ignoring both standard practice and its own recommended guidance for trial burns.

In the NODA, SVM emissions are calculated by summing the emissions of cadmium and lead. LVM emissions are calculated by summing the emissions of arsenic, beryllium and chromium. In both cases, if the emission level of a specific metal is reported as not detected (ND), the Agency uses one-half the detection limit for that metal when calculating the emissions for the SVM or LVM category.

Metals stack sampling methods employ two sample collection areas, a "front-half' and "back-half of the multi-metals sampling train. The gas sampled is pulled through both collection areas, generating two sample fractions that are analyzed separately.

In the NODA, the total emission rate for a metal is reported as ND if *either* the front or back half results are ND. While this convention may have been used in originally reporting the source test data, we believe that it is inappropriate for calculating SVM and LVM emissions rates that may be used when setting the MACT standards, because it understates the actual emission rates. In such cases, the actual detected value in a sample fraction is inappropriately discounted solely because the other fraction was ND. Our members' analyses indicate that the impact may be considerable in some cases, reducing the total level of emissions reported by nearly 50 percent.

As a part of their comments submitted on the June 27, 2000 NODA database for boilers, Eastman Chemical Company (an ACC member) stated that EPA was not properly handling data that were reported as "less than" in the database. In their response to comments document, EPA dismissed these comments stating that Eastman's suggested methodology was not the norm and that following Eastman's methodology would not impact the resulting standards. The concern that both Eastman and ACC raised was that EPA's method of reporting values that include non-detects would lead to substantial underestimation of test results.

To illustrate this point, please consider the following example. The front half of a train detected 100 ug/dscm of pollutant x, but pollutant x was not detected in the back half of the train. For this example, consider that the detection limit is 5 ug/dscm. This data would be reported as <105 ug/dscm. If the entire 105 value is taken as the non-detect level and $^1/2$ is used, the results in the database would be 52.5 ug/dscm, which is not accurate. A more accurate method would be to take half the detection limit from the back half of the train (2.5 ug/dscm) and add the two giving a value of 102.5 ug/dscm. This is a significant departure from taking half of the entire sum, and could result in significantly different standards. ACC is convinced that EPA's methodology (used in both NODAs) is not standard practice for reporting and handling data of this type and is in conflict with EPA's own risk burn guidance document *(Risk Burn Guidance for Hazardous Waste Combustion Facilities* EPA 530-R-01-001, July 2001). The following is taken from pages 168-9 of this guidance document.

"For data reporting to support site-specific risk assessments at combustion facilities, the following reporting convention is recommended when the results from each sampling train have to be summed to arrive at a total train mass:

- If results for all fractions are non-detect, then the full RDLs (or EDLs) should be summed and the results reported with a `less than' sign;
- If a constituent is detected in some of the train fractions but not in others, then the data should be reported as a range (i.e., `greater than' the total amount, but `less than' the total detected amount plus the full RDLs or EDLs for the non-detects). ..."

ACC's recommended methodology comports completely with EPA's guidance because it results in a reported range of usable values rather than an overall reported value of non-detect.

We recommend that, when there is a non-detect value in one of the two sample collection fractions, the convention of treating NDs as present at one-half the detection level be applied to each half of the sampling train *individually*, rather than to the *summed* front and back half results. The resulting value is clearly a more accurate representation of emissions from a given source, and is important in ensuring that the MACT standards to be developed are achievable.

This trial burn guidance also points out that detection limits are defined a number of different ways and are not always consistently reported (see page 168). Given that non-detects are often defined and reported differently, ACC suggests that EPA needs toexamine each value reported as a "less than" number and revise the value in the database to properly reflect what the test actually showed. In addition, we believe that the Agency should carefully examine the data to determine what role non-detects will play in the development of the permanent replacement standards. ACC does not believe non-detects in the database should drive the standards. If they do, it would be very difficult to ever show compliance with a standard that is based on a detection or the detection limit. The method of developing the standard must be consistent with the methods for complying with the standard, and no standard should be driven by non-detects.

> <u>Response to this issue is discussed in the above Comment ID No. 15/16. Note that although this entire issue is no longer valid because non-detects are considered at the full detection limit in the revised data base, EPA strongly disagrees with the commenters assertions. EPA's previous non-detect handling convention was actually the opposite to what the commenter suggests, as described in the previous Phase II NODA Database Comment Response Document (which was included as an attachment to this NODA Data Base Background Document). EPA convention was to identify a value as non-detect only when **all** sampling train fractions are non-detect. This is the procedure that has typically been used in the vast majority of CoC and trial burn reports. EPA was not "dismissing" legitimate comments; but rather was suggesting that this potential problem is likely very limited (is has only been identified in 2 specific cases). Further, EPA did not think it was worthwhile or necessary to review the back half / front half detection status of all stack gas measurements because it is clear that most, if not almost all, of the data are reported using the convention where a non-detect is reported only when all fractions of the sampling train are non-detects.</u>

EPA Should Consider Additional Subcategories

EPA has organized the NODA database to allow for analyses of six constituents in each of the following six subcategories: cement kilns, incinerators, lightweight-aggregate kilns, coal-fired boilers, HCl production furnaces, and liquid-fired boilers. Also mentioned in the NODA are a limited number of design/operational subcategories. We believe that these lists are a good starting point, but additional subcategories should also be considered to fully evaluate differences in operating parameters, types and effectiveness of pollution control devices, and differences in feed conditions. At this stage of data analysis, the Agency should consider the widest possible range of subcategories.

One obvious potential subcategory that the Agency should evaluate includes all combustion devices operated by the U.S Department of Defense (e.g., the so-called "chem demil" devices) or the U.S. Department of Energy. These devices are fundamentally different in both function and operation from other combustion devices. Because they are designed for the express purpose of incinerating uniform feedstocks of highly toxic wastes such as nerve gas, the control and operational focus of these devices can make containment, spill prevention, and other factors just as important as (or even more important than) good incineration efficiency or reasonable cost effectiveness. At this early stage of data analysis, emissions data from the

Department of Defense and Department of Energy combustion devices should be considered separately from other data.

EPA agrees that potential incinerator subcategories for Department of Defense and Department of Energy units should be considered (although not necessarily adopted).

Data for All Sources Currently Authorized to Burn Hazardous Waste Should be Retained in the Database

ACC supports the Agency's decision to remove from the database all data from combustion units that are closed and no longer authorized to burn hazardous waste. However, ACC is concerned that the Agency may have inappropriately deleted from the database, or failed to obtain, a source's test report(s) based on conjecture that a source *may* close or cease burning hazardous waste at a future date. The Agency notes that: "If we *learned* that a source had stopped burning hazardous waste and is undergoing, or has *indicated* to regulatory officials its plan to begin, RCRA closure procedures, then we did not obtain a copy of that source's test report." Rather than relying on such information or indications, it is imperative that the Agency *confirms and documents that a source is no longer authorized to burn hazardous waste* before removing its data from the database.

We believe that as long as a facility is authorized to burn hazardous waste its test report(s) should be included in the database. ACC is aware that in at least one instance, EPA failed to include data from a source (owned by Eli Lilly and Company) that is currently authorized to burn hazardous waste. The Agency should reinstate data from all relevant sources that are authorized to burn hazardous waste and make such data available for review.

EPA has made extensive efforts to collect as much information as possible from all currently operating hazardous waste combustor units. Data that were missed, and were submitted as part of the NODA, have been included in the data base and considered for evaluation. EPA did not include units in the data base which are not expected to be operating at the time of the proposed Replacement HWC MACT Rule. All units which were improperly excluded have been added back into the data base as requested.

<u>Comment ID No. 38 – Eastman Kodak Company</u>

<u>Comment Summary</u> – Commenter provided Excel spreadsheets with specific comments on the data base for the Eastman Kodak facilities (comments are not included in this document). Additionally, a number of additional general comments are provided.

<u>Comment Response</u> – Changes were made as requested to the data base. Responses to general comments are provided below in blue underline type.

<u>Comment ID No. 38 – Eastman Kodak Company</u>

Eastman Kodak Company operates two hazardous waste incinerators, the B-218 rotary Kiln incinerator ("RKI") and the B-95 multiple hearth incinerator which are included in EPA's database referenced in the July 2, 2002 Notice Of Data Availability on NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacements Standards and Phase II). Kodak has reviewed the data on these two units and is enclosing comments on the data.

Kodak's key concern is that the database includes many datasets that were collected for purposes other than establishing worst-case hazardous waste combustor maximum achievable control standards (HWC MACT) emissions. Many of the tests were conducted at operating conditions that were not worst case for one or more of the HWC MACT emissions standards (for example, not maximum waste feedrate, maximum metals feedrate, or minimum electrostatic precipitator power). The database will be used to set HWC MACT emissions standards that cannot be exceeded under any operating conditions, and compliance with these standards must be demonstrated under worst-case operating conditions. Therefore data that will be used to set these emissions standards must be collected under the same type of worst-case operating conditions as those that will be used for the compliance test for that standard. This means that each parameter that is required by the final HWC MACT rule to be worst case during the comprehensive performance test (CPT) must also be worst-case during any tests included in the HWC MACT database (If the compliance requires maximum feedrate, and maximum air flowrate and minimum electrostatic precipitator voltage, then the only valid datasets must also have been conducted at maximum feedrate, and maximum air flowrate and minimum electrostatic precipitator voltage). Any deviation from worst case conditions therefore invalidates the data, requiring it to be discarded from the standard setting process unless a reasonable extrapolation to worst case conditions can be applied. The only valid means of extrapolation are, extrapolations that are allowed from the CPT for compliance purposes, such as extrapolating the metals feedrate to worst case and proportionately extrapolating the emissions as allowed in the interim HWC MACT rule.

Kodak is attaching a spreadsheet that includes those Conditions IDs whose data was generated at a Kodak facility. The spreadsheet includes identifying information from the original database and adds a column entitled "Kodak comments- worst case or comments why it is not worst case." For Condition IDs that do not represent worst case, the reason why they are not worst case operating conditions for the relevant emissions parameter is included. This information will allow EPA to delete the data that is not worst case from the standard setting database, unless it chooses to make a valid extrapolation of the emissions.

The only Kodak test conditions that were worst case for HCl/C12 were the Trial Bums, which are Condition IDs 915C10 and 915C11 for the B-218 RKI and 3016C13 and 3016C14 for the B-95 MHI. All the tests are believed to be worst case for dioxin/furan emissions. None of the tests were designed to be worst case for mercury, and consequently none represent worst case emissions because all the tests were run at less than *10%* of the maximum mercury feedrate. The two tests conditions at B-218, 915C1 and 915C4 are worst case for low volatile metals "LVMs". At the multiple hearth, condition IDs 3016C3, 3016C4, 3016C9, 3016C10, 3016C12, and 3016C14 were worst case for LVMs, but the other five conditions were not worst case, because maximum LVMs were not fed and in some runs maximum temperature was not achieved. Condition ID 915C1 at the B-218 RKI was worst case for semi-volatile metals ("SVMs"). Only condition IDs 3016C3 and 3016C14 at the MHI were worst case.

The other runs did not have maximum temperature, maximum chlorine, or maximum SVM feedrate. At B-218, condition IDs 915C10, 915C11, 915C13 were worst case for particulate matter ("PM"). The other condition had a low sludge feedrate. At the MHI, condition IDs 3016C5, 3016C6, 3016C8, 3016C13, and 3016C14 were worst case for PM. The other runs had low ash feedrate or a low sludge feedrate.

<u>Revisions to the test condition classification flags are made as suggested.</u>

Kodak has additional concerns with the way the database is constructed. The MACT floor must be determined for the entire set of emission compounds from the same set of best sources, because the entire set of emissions standards must be achievable by these best sources. Standards for new and existing sources are required to be the "maximum degree of reduction of emissions.. .that the Administrator ... determines is achievable . . ." and "shall not be less stringent than is achieved in practice by the best controlled similar unit,..." as stated in Section 129(a)(2) of the Clean Air Act. The NODA is organized to determine emissions achievability for each compound (PM, HCl, Hg, Cd, etc.) individually, by looking at the facilities that performed best on each individual emission compound. The use of different facilities (with different incineration systems and air pollution control technology) for each emission compound makes it likely that no source will be able to achieve all the emission standards. Therefore, the emissions levels have not been shown to be achievable in practice, since it has not been demonstrated that the best sources can achieve compliance with the set of standards.

Certain technologies are better at eliminating one emission compound, but are not as good at reducing other compounds. This is particularly true of dioxins and particulate, where a baghouse is the best particulate control technology, but a wet quench is the best dioxins control technology. The addition of a baghouse to reduce particulate emissions may increase dioxin emissions. Standards obtained in this way may not all be simultaneously achievable and certainly have not actually been demonstrated in practice. The appropriate way to show achievability is to choose the best sources and determine the emissions rate of all regulated compounds from this set of best sources. The best sources could be chosen by the weighted average of the rankings of the emissions of each individual compound from each source and selecting the sources with the highest overall rankings. This would ensure real achievability, thus meeting the mandate of the CAA.

<u>Simultaneous achievability of the MACT standards will be carefully evaluated.</u>

Kodak is also concerned that the database includes data for chemical demilitarization facilities. These facilities were built because the military decided that certain materials should not be sent to existing hazardous waste incinerators. The materials are highly specialized; most are explosive; and they are much more dangerous than the more routine materials handled at other hazardous waste incinerators. Therefore these materials should either be left out of the hazardous waste incinerator database or constitute a separate subcategory with its own emissions standards.

<u>EPA will carefully consider the use of data from chemical demilitarization facilities when determining the MACT floor standards.</u>

Kodak is also concerned with the inclusion of facilities that have upgraded since March 1997 to meet the interim HWC MACT standards and concerned about the exclusion of facilities that closed after that time. It seems that inclusion of facilities that upgraded early is contrary to the express provisions of the Clean Air Act and creates a penalty for the entire source category based upon these early compliance activities.

Congress never intended that data from sources that are upgraded to meet a given MACT rule be used to create a second more stringent MACT rule. Section 112 (d)(3)(A) says, "the average emission limitation achieved by the best performing 12 percent of existing sources (for which the agency has information) <u>excluding those sources that have, within 18 months before the emission standards is proposed or within 30 months before such standards is promulgated whichever is later, first achieved a level of emission rate of emission reduction which complies or would comply.</u> (emphasis added)" The later of these two dates is March 30, 1997, based on the initial promulgation of the rule. The database is full of data from testing events well after 1997. Numerous examples exist from many facilities, where data was collected after the installation of WESPs to reduce metals and particulate emissions, or after the installation of carbon injection systems to reduce dioxin/furans and/or mercury emissions, even additional wet scrubbers have been added to reduce HCl/chlorine emissions. The CAA is very clear, and the data from sources after the time period defined in section 112 (d)(3) were not to be part of the pool of data.

While it is not inappropriate to use new data for facilities that have not upgraded since 1997, we believe that facilities that have had a major upgrade since the initial database was collected should not be included in the database.

<u>See responses to this identical issue in a number of above comments; specifically Comment ID Nos. 19 and 27.</u>

Comment ID No. 39 – Rohm and Haas Texas Inc.

Comment Summary – Comments on the data for Rohm and Haas Deer Park TX incinerator ID No. 740.

Comment Response – Changes are made in response to most comments as requested.

Comment ID No. 39 – Rohm and Haas Texas Inc.

A few changes are suggested/need to be made to correct typographical errors or to update information based on data submitted to the Texas Natural Resource Conservation Commission within a revised Certification of Precompliance for the HT-1 BIF dated June 1, 2001.

The recommended changes are highlighted in red and shown underneath the original data in a line below.

1. The combustor capacity is too high: it is reported as 335 MMBtu/hr, and should be 235 MMBtu/hr. This may have been a typographical error that needs to be amended. The combustor capacity recommended changes are located in the "source" and "summ 1"worksheets.

2. The stack height indicated in the "source" worksheet needs to be corrected from 144 ft to 146 ft, due to a typographical error.

3. The stack gas velocity indicated in the "source" worksheet appears to be an average velocity. The recommended change is a range from 4.4 to 44 ft/s instead of 21 ft/s.

4. The feedrates for mercury (Hg) in run 1 (0.475), run2 (0.475), and run 3 (0.475) indicated in the "feed" worksheet are wrong; probably due to a typographical error, because the average indicated is correct. The corrected values for the Hg entries, all 0.190, and the subsequent Feedrate MTEC calculations following below, in the worksheet, are entered and highlighted as described above.

5. Also for run 3 nondetect (nd) was not indicated for all the metal feedrates and subsequent Feedrate MTEC calculations, located within the "feed" worksheet: the corrections are entered and highlighted.

> The commenter misunderstood that the non detects were positioned to the left of the value, not to the right. No changes made.

6. The BIF feedrate Limits for the carcinogenic metals arsenic, beryllium, cadmium and chromium have been changed to reflect the feedrates established for these metals per the revised Certification of Precompliance discussed above.

Comment ID No. 40 – Continental Cement Co.

Comment Summary – Various comments on data for cement kiln ID No. 319 were included in Excel spreadsheet format (not included in these comments). Additionally, further comments were provided as included.

Comment Response – Changes were made to the data as reasonably possible. Responses to the additional comments are included below in blue underline text.

Comment ID No. 40 – Continental Cement Co.

Gossman Consulting, Inc. has reviewed the requested NODA database files sent to GCI in the 7-24-02 e-mail request. Data that has been checked in the 319-GClcheck.xls file has been highlighted in green and suspect data is highlighted in a different color. The excel spreadsheet file was compared with the acrobat file and pages 2, 3, 4, 5, 10, 11, 19, 20, 39, 40 of the excel file are missing from the acrobat file. The Continental data in the specific emissions constituent/grouping files has also been compared and problem areas are noted at the end of this report.

The following is a list of observations, comments and general findings from the data review. GCI has also included an SRE calculation instructional document in case Continental chooses to include this with their comments to US EPA.

- While EPA claims to be using one-half detection limit for metal SRE calculations, broad based examination of the SVM and LVM spreadsheets indicate this was not done consistently.

  EPA would like specific examples of where this apparently took place. Without such examples, it is hard to respond. Note that in the revised SRE calculation procedure, non-detects in the feed are handled at zero (0), where as non-detects in emissions are handled at the full detection limit.

- EPA has incorrectly assumed that a "<"symbol in front of a value indicates that the analyte was not detected. In some cases, the analyte was detected in one half but not in the other half of a sampling train. The sum is correctly labeled with a "<". For example; 20mg + <1mg = <21mg. There are no doubt, other instances where the label is applied because the value was below the quantitation limit but above the detection limit. In neither case should this data be identified as "not detected" nor is using half the value appropriate for calculations.

  This comment is now not of concern since non-detects in the emissions are treated at the full detection limit.

- The LVM, SVM HCl/$C1_2$ and Hg spreadsheets present *no* formulas to allow calculations to be verified. EPA NODA's should allow the public to verify current calculations by providing all formulas used to calculate data.

  EPA is not sure what formulas are requested. The summary sheet data come directly from the individual source spreadsheets, where the data handling and manipulation calculations are transparent.

- Much of the data in the database used to calculate metal SRE's has used different sample preparation methods to determine metals in feed streams. For example, only recently has EPA approved *a complete* dissolution method as part of SW-846 and it has not yet been widely adopted. Yet, some facilities have used HF based dissolution methods for many years. The result is an "apples and oranges" comparison of SRE data that can differ by orders of magnitude and has no scientific validity when combined in aggregate. The only SRE's for metals that should be considered valid are those where closure on a total system mass balance can be verified.

  This is not considered to be a significant issue because the majority of metal and chlorine feeds are attributable to spiked hazardous wastes, for which the feedrate is extremely accurate and reliable (not reliant on sample digestion efficiency). Additionally, note that if this was a potential issue, it would result in SREs that are lower than they should be (not as good as they would be if a improved sample extraction / digestion solution was used), thus the resulting MACT floor standards should be readily achievable.

- The LVM, SVM and Hg spreadsheets note the % of emission due to non-detects but do not note this for inputs. This is an important data qualifier for both portions of the SRE calculation.

  Non-detect percentages are included in detail for each of the feedstreams, as well as the overall grouped feedstreams in the revised HWC database.

- SRE's were calculated through an extremely convoluted process that significantly limits the ability to QC the data. SRE's should not be calculated from emission concentrations but rather more simply by comparing input rates with output rates. This can significantly improve data quality. Stack gas emissions analysis for trace metals has a + or - 25% analytical accuracy, indeed all metals analysis typically have this level of accuracy, but for trace metals emitted from a source at low levels this can severely impact the subsequent accuracy of any SRE calculation. This is why it is necessary to utilize the various output values for the trace metals, these values are frequently larger, i.e. less prone to being "nd", and there are more values ensuring that the analytical variability is statistically reduced in its impact on the SRE calculation.

  SREs are calculated very simply as the total feedrate MTEC minus the stack gas emissions rate divided by the total feedrate MTEC. This is simply the ratio of the input minus the output to the input. EPA does not understand why this is so convoluted; or why what the commenter suggests is any different (provides a different answer).

Regarding non-detects, EPA's new procedure to calculate SREs considers feedrate non-detects at zero (0) and stack gas emissions non-detects at the full detection limit. This properly eliminates the potential adverse impact of high non-detects in the feed on SREs (specifically, creating artificially high SREs as a result of feed non-detects).

- Because the data used to calculate SRE's could have significant variability, the calculations of a solitary value without a quantitative qualification is inappropriate. Further, statistical analysis of these solitary values in aggregrate will not necessarily reveal the full range of variability. EPA should calculate SRE's for each parameter of each run as a range. A procedure for doing this has been in active use by the industry for many years and is attached.

  It is sufficient to calculate SREs for each individual test run. These test runs are averages over a three hour test period, and as such provide a highly "averaged" sample that captures much measurement and process variability. Looking at the variation in three separate runs which make up each test condition provides further insight into the potential for variation. The procedure recommended by the commenter is not necessary for the purposes of setting MACT limits.

  First, procedures suggested for estimating measurement "uncertainty" are highly qualitative and would provide no additional useful information. EPA does agree that, as the commenter suggests in the attached paper, determining mass balances through the entire system (which require the calculation of the amounts of metals found in the clinker and cement kiln dust) can be a very effective and valuable piece of information for confirming the potential accuracy of feedrate and stack gas emissions measurements; and that mass balances are critical for evaluating the behavior of metals in the waste combustor systems. However, information on the metals content of the cement kiln dust and clinker is very frequently not available, and has not been included in the HWC data base. Additionally, there is an extremely high level of confidence in both the feedrate and stack gas measurements, especially because much of the test data are from conditions where metals and chlorine feeds were spiked. SRE variability is captured through the use of three different test runs which are contained within a test condition, and through the use of a single test run conducted over a 3 to 4 hour period, as mentioned above.

- The HCl/Cl2 ppmv calculations have used assumptions that have not been stated. These assumptions were not clearly identified in the NODA, as they should have been to allow proper review. $HCl/C1_2$ ppmv values presented do not match those found in many emission reports for a variety of reasons dependent on the quality of the data and how the data was gathered.

> <u>EPA does not know which assumptions the commenter has in mind. Results in the data base come directly from the CoC test reports, and calculations are shown directly in the Excel data sheets (or the data from the Excel spreadsheets can very easily be converted to the units or the format presented in the test reports).</u>

- The basis for the HCl/$C1_2$ ppmv data is not clearly identified. It should be clearly noted as "oxygen corrected", "dry" and "as Cl"., etc.

- The HCl/$C1_2$ ppmv data is calculated in a conventional process that seems to propagate significant rounding errors.

- Much of the data entered into the plant specific spreadsheets can *not* be matched to data from the reports. This data had obviously been previously manipulated. These spreadsheets should show data directly in units as found in the reports, so that it can be properly proofed. Further *all* calculations should be done in the spreadsheet and *all* assumptions used in those calculations need to be clearly stated in the spreadsheet. It would also be very helpful if the source of all data in a spreadsheet were clearly identified.

> <u>Data provided in the spreadsheets can easily be manipulated and transferred to any set of units or formats which are easiest for the commenter to review.</u>

- Many of the "condition dates" are "report dates".

- Numerous data in the 319.xis spreadsheet do not match the original reports. All of the verified data has been highlighted green and the data that is wrong is highlighted pink Examples of errors include:

-- Nondetects that have not been identified

-- Solid <u>hazardous</u> waste fuel and containerized waste fuel were confused CO and THC values do not match the report

-- The Cl spike used in some testing was not included as an input on the spreadsheets process data has been averaged and then inaccurately listed as reporting conditions of individual runs

-- The firm preparing one set of reports was incorrectly identified

> <u>Specific comments were the data base is incorrect have been changed as noted.</u>

- There are large quantities of analytical data and process data in the reports that have not been put in the EPA spreadsheet.

  This type of data will be entered as considered appropriate.

- The use of one-half detection limit to calculate dioxin TEQs is in direct conflict with EPA guidelines.

- Dioxin data does not represent data taken directly from reports. It has had a unit conversion performed prior to being placed in the spreadsheet and is therefore not readily proofed. Small differences EPA TEQ calculations vs. those in the stack test report were noted throughout.

- The data used for Continental contains dioxin emission data from both before and after a major change in raw materials. This is likely to confuse any data analysis since that difference in operating conditions is not noted.

  PCDD/PCDF emissions are now calculated considering non-detects at the full detection limit. EPA will take into appropriate consideration how to handle PCDD/PCDF data when raw materials feeds have changed.

- Test 319D 1 discrepancies on PM Stack Emissions on plant specific spreadsheet and particulate spreadsheet.

- Test 319C2 discrepancies in TO Stack Emissions on plant specific spreadsheet and particulate spreadsheet.

- Test 319C4 discrepancies in TO Stack Emissions on plant specific spreadsheet and particulate spreadsheet.

- Test 319132 discrepancies in SVM Stack Gas Emissions on plant specific spreadsheet and particulate spreadsheet.

GUIDE FOR PERFORMING A TRACE METALS MASSBALANCE AND DETERMINATION OF SYSTEM REMOVALEFFICIENCY ON A COMBUSTION DEVICE

by David Gossman

1. Scope

1.1 The purpose of this guide is to provide a procedure to be used to perform a mass balance and system removal efficiency (SRE) calculation of trace metals entering and leaving a combustion device. Such a combustion device may be an incinerator, an industrial furnace or steam generation boiler or a heat transfer media heater (such as a direct fired hot oil heater). A mass balance calculation aids in determining the quality of the analyses of the input and output streams of a combustion device. Due to analytical imprecision, it may not be possible to demonstrate that the input mass of a specific trace metal is equal to the output mass of this metal. To demonstrate "closure" in a mass balance it must be shown that the mass input plus or minus the analytical imprecision overlaps the range of values of the mass output plus or minus the analytical imprecision. Similarly, SRE's need to be calculated as a range to account for analytical and sampling imprecision. By utilizing the appropriate sampling and analytical methods, this guide could also be used to determine the mass balance and SRE of non-metallic elements.

1.2 The units may be expressed in any format provided they are used consistently for both the input and output values. Input and output values may be expressed as mass per unit time, however the units must be consistent for both input and output values; e.g., grams per second or grams per hour, the units of time must be the same for both input and output values.

1.3 This guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this guide to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Reference Documents

2.1 These are covered in Section 7, Test Methods.

3. Terminology

3.1 Description of terms specific to this guide:

3. 1.1 Trace metals - any metal constituent that is less than 1 % by weight in any one of the device input or output streams.

3.1.2 Combustion device -- any device that is intended to convert organic based fuels into energy by oxidation. Generally for the purpose of this guide, this is limited to combustion devices such as incinerators, industrial furnaces, direct fired steam generation units or direct fired heat transfer media heaters.

3.1.3 Mass balance -- the sum of the inputs into a process (in this case the combustion device) of a specific metal are compared with the sum of the outputs from the device of that same metal.

3.1.4 Closure -- when the total mass input of a metal plus or minus the analytical imprecision overlaps the ranges of values of the total mass output of that same metal plus or minus the analytical imprecision.

3.1.5 Analytical imprecision -- each analytical method has a determinable level of imprecision. Generally this is stated as a percentage of the measured analytical value. As an example, SW-846 Method 0060 typically has a QA/QC data quality goal of ±25% of the measured value. The achievement of this goal is demonstrated by the QA procedures during the execution of the analytical method.

4. Summary of Practice

4.1 The person wishing to perform a trace metals mass balance and SRE determination on a combustion device selects the appropriate sampling and analytical methods which will measure the targeted trace metals in all of the combustion device inputs and all of the combustion device outputs. A careful accounting of the mass in each of the device inputs and outputs must be made over a selected time period. This is accomplished by selecting the appropriate sampling point for each input and output stream and an appropriate sampling frequency based on the knowledge of the process, and by measuring the mass input and output of each of these streams during the sampling period. The analytical data and the mass input and mass output data are used to calculate a range of total mass input and total mass output for each of the targeted metals. A comparison of the range of input versus the range of output values for each metal will determine whether a balance has been achieved and therefore if the SRE can be considered reliable.

5. Significance of Use

5.1 A demonstration of closure in a mass balance would be indicative of a set of analyses and input and output stream rate measurements that adequately characterize the concentration of the targeted trace metals present in each of the combustion device's input and output streams. A failure to demonstrate closure would be indicative of a failure to characterize the metal concentration in one of the input or output streams or the failure to adequately measure the rate of an input or output stream or, possibly, the omission or misidentification of a stream. Lack of closure can also occur if a metal is retained and "builds up" within the system and the testing did not allow sufficient time for the system to reach equilibrium.

5.2 A failure to characterize the concentration of metal in an input or output stream may be indicative of an inadequate level of precision in the sampling and/or analytical methods. It may also be that the mass input or output rates have not been adequately measured during the sample period. Either of these indications would require an examination of the sampling and analytical method and their execution, sampling frequency and process input/output measurements and controls. The successful demonstration of closure of the mass balance ultimately rests on the achievable accuracy of the analyses and input/output stream measurements. If input and output streams cannot be accurately metered, particularly if these streams exhibit wide variability in flow rate over the test period, closure of the mass balance is unlikely. Steady state operating conditions are generally required for the test period. This test period should not closely follow a period of non-steady state operation. Processes with highly erratic feedrates, process cycling or highly erratic trace metals concentrations in the

input/outputs may require an elaborate sampling and analytical plan to achieve closure of the mass balance.
5.3 Once a mass balance has been demonstrated SRE's can be considered reliable and the SRE can be used to project metal emissions at higher and lower input rates (as long as the SRE does not vary with input rates).

6. Procedure
6.1 A person knowledgeable of the process should examine each process input and output stream and determine the following:
6.1.1 The accuracy of the measurement of the stream. The accuracy of this measurement should be as good as possible over the test period, but should at least be no more than ±10% of actual.
6.1.2 The expected variability of the trace metals concentration in the various input and outputs must be considered when selecting a sample frequency for that stream. More variability in the trace metals concentration will require more frequent sampling. Alternately, if the stream is highly variable in its trace metals concentration and these variable concentrations can be isolated to discreet volumes, it is possible to sample and analyze these volumes separately; either prior to the test if this is an input or subsequent to the test if it is an output.
6.1.3 If very low levels of a trace metal are expected for a stream, there should be a consideration of collecting a larger sample than normal or utilizing an analytical procedure that achieves a lower detection limit. Either of these considerations may affect the sampling method or sampling location.
6.1.4 Some input or output streams should be sampled on an advanced or delayed schedule. In some cases the only safe sample point of a feed stream may result in the feed stream entering the device several minutes or more subsequent to sampling. Or, an output stream may represent the inputs fed to it an hour or more previous to its sampling. Sampling times must be adjusted to accommodate such time delays, otherwise the test period will not be characterized by analyses.
6.1.5 Sample point selection and sampling method must be considered as a part of the overall quality of the performance of the mass balance. In addition to the safety of the person performing the sampling, consideration must be given to how representative a sample from that location is of the stream. As an example; is the stream well mixed? Have two or more sub-streams entered the stream prior to the sample point? Is the sample likely to be contaminated during sample retrieval? This can occur due to the stream being very hot or very cold, or being at a location that is dusty. Sampling tools must be appropriate for the location, but not introduce contaminants into the analysis. As an example, a stainless steel sample cup may be the standard sampling tool, but" such a tool can contaminate the sample with chromium and/or nickel.
6.2 After examining all these considerations, a detailed plan is prepared to specify the sample points, the sampling method at each point, the schedule for sample collection at each point, a sample storage and label designation system and a plan to modify the sampling schedule in the event of test delays or interruption.
6.3 Prior to the test period the sample storage materials and sampling tools must be strategically located. The persons performing the sampling must be trained and a sample

coordinator designated. A clean, dry location must be selected for the cataloging and storage of the samples. Invariably, a stack emissions sampling and/or analytical firm must be selected. This firm must understand the QA/QC requirements that they are expected to meet and the importance of communication of run start and stop times and, in the event of an interruption, the start and stop times of any interruption of their sampling due to any cause.
6.4 On the day of the test, the sampling of the various streams is performed in accordance with the sampling plan determined above. Those streams that must be sampled prior to the test period must be sampled the appropriate time period in advance of the start of the stack gas sampling. This requires coordination with the stack sampling firm. The sampling schedule is keyed to the stack sampling execution. If the stack sampling is interrupted, the input/output stream sampling schedule must be altered accordingly. At the end of the test period after all of the input and output streams have been collected, the properly labeled samples are sent for analysis.
6.5 It is recommended that the analysis of the samples be periodically monitored. This is usually done by the sample coordinator. The purpose of this monitoring is to ensure that the samples are analyzed prior to their expiration date, that the QA/QC checks have been performed as agreed and to spot-check the data for obvious errors such as misdesignation of sample ID and mathematical errors.
6.6 A sample trace metals mass balance and SRE report is attached.

7. **Test Method**
7.1 Process Stream Sampling and Analytical Methods - Process streams such as kiln feed, cement dust or incineration fly ash, clinker or bottom ash and fuels are sampled utilizing a "grab" sample method and subjected to an analysis for trace metals utilizing the ASTM E926 Method A or SW846 3052.
7.2 Stack Emissions Sampling and Analytical Methods - Stack emission samples are collected and analyzed utilizing EPA SW-846 Method 0060.

8. Report
8.1 Once all of the analytical data is compiled, as well as the input/output stream flow rate data, a spreadsheet is constructed. This spreadsheet calculates the mass for each targeted trace metal for each input and output stream.
8.1.1 Each analysis has a stated or determined precision. Generally this is expressed as ±XX%. For each metal in each stream, a minimum and maximum rate is calculated by multiplying the analytically determined concentration times the mass input or output rate according to the following method.
8.1.2 If the analysis is below the detection limit of the analytical procedure, the minimum metal mass rate is 0 (zero). The maximum value is the detection limit concentration times the mass rate of the stream.
8.1.3 If the analysis is above the detection limit but below the quantitation limit, the minimum metal mass rate is the detection limit times the mass rate of the stream. The maximum metal mass rate is the quantitation limit times the mass rate of the stream.
8.1.4 If the analysis is above the quantitation limit, the minimum metal mass rate is the declared imprecision percentage subtracted from 100% and the resultant times the concentration and that value times the mass rate of the stream. (e.g. 75% x conc. x mass rate)

The maximum metal mass rate is the declared imprecision percentage added to 100% with the resultant multiplied with the concentration and that value times the mass rate of the stream. (e.g. 125% x conc x mass rate)

8.1.5 This is repeated across the various metals and the streams to result in a minimum and maximum metal mass for each metal in each input and output stream.

8.1.6 At this point, it is now possible to create a minimum and maximum input value for each targeted metal by summing the minimum values for each metal in the inputstreams and the maximum values for each metal in the input streams. Perform a similar summing of the minimum and maximum values for the output streams.

8.2 For each targeted trace metal, there are now two ranges of values, the mass input ranging from minimum to maximum and the mass output ranging from minimum to maximum. If these ranges overlap when compared, meaning a value of each is within the range of values of the other, closure of the mass balance for that trace metal has been demonstrated.

8.3 The SRE is determined as a minimum and a maximum by ratioing the minimum emissions to the maximum input and the maximum emissions to the minimum input respectively.

Gossman Consulting, Inc. 45W962 Plank Road Hampshire, IL 60140 847-683-4188 FAX 847-683-4212 http://www.gcisolutions.com

<u>Comment ID No. 41 – Occidental Chemical Corp.</u>

<u>Comment Summary</u> – Commenter provides comments on data for Occidental Ingleside TX unit ID No. 614. Also, results of recent PCDD/PCDF testing are included.

<u>Comment Response</u> – Changes are made as requested. The new PCDD/PCDF test condition is included in the revised database.

<u>Comment ID No. 41 – Occidental Chemical Corp.</u>

Occidental Chemical Corporation (OxyChem) - Ingleside Plant is providing comment in response to the Notice of Data Availability (NODA) published in the July 2, *2002 Federal Register* regarding the Standards for Hazardous Air Pollutants for Hazardous Waste Combustors. We have reviewed the data bases referenced in the NODA and have discovered errors and omissions. Our comments consist of two parts:

- corrections to the "Detailed Individual Source Data Sheet" for our facility; and
- the addition of an emissions test report.

After reviewing the "Detailed Individual Source Data Sheet" for our facility (Phase 1 ID No. 614), we discovered several errors. Below please find corrections to the corresponding data sheet item numbers.

9 Unit ID Name/No.: VCM Incinerator CCIN-1 (F-550)

13 Combustor Characteristics: BIGELOW - LIPTAK custom design combustion chamber with a waste heat boiler

16 APCS: WQ/PB/SC

17 APCS characteristics: Water quench, packed bed, 2 spray columns, knockout pot (WQ/PB are for recovery of 10% HCl)

18 Hazardous Wastes: Liquid wastes and process vents

19 Hazardous Waste Description: VCM heavy ends, VCM light ends, EDC heavy ends

20 Supplemental Fuel: Natural gas

26 Gas Temperature (°F): 108

28 Permitting Status: RCRA

In addition, we have attached dioxin/furans data obtained during an emissions test conducted during February 7 and 8, 2001 on incinerator CC1N-2 (F-570). The samples were collected during normal operating conditions of this incinerator.

If you have any questions concerning this submittal, please contact me at (361)776-6170.
Sincerely,
David D. Harvey
Health, Environmental, and Safety Department
Occidental Chemical Corporation - Ingleside Plant
DDH/ch:T 1 RR 148 W Attachment

Attachment

April 27, 2001

Mr. Mark Evans
Occidental Chemical Corporation Ingleside Plant
Highway 361
Gregory, TX 78359

Subject: Dioxins/Furans Testing Results for Incinerator F-570 Dear Mark:

On February 7 and 8, 2001, URS conducted sampling of the stack gases from Incinerator F-570 at Occidental Chemical Corporation's Ingleside Plant for dioxins and furans. This testing was performed to allow OxyChem to evaluate emissions of dioxins and furans relative to the requirements of 40 CFR Part 63, Subpart EEE, the *National Emission Standards for Hazardous Air Pollutants (NESHAP) from Hazardous Waste Combustors*, i.e. the HWC MACT.

There are two incinerators in the VCM plant at Ingleside that are subject to the HWC MALT, Incinerator F-550 and Incinerator F-570, that are currently operated under RCRA and air permits issued by TNRCC. The two units are identical, and both units burn RCRA hazardous wastes and process vent streams. OxyChem is currently planning the installation of costly equipment to control emissions from the two incinerators to meet the dioxins/furans emission limit of the HWC MACT. The results of this testing are to be used by OxyChem in the final design of the catalytic oxidizer being designed for control of dioxin and furan emissions.

The testing was performed in full conformity with the testing requirements specified in the HWC MACT at 40 CFR 63.1208(b)(1) for dioxins and furans. Those requirements are:

- The sampling must done using SW-846 Method 0023A;
- Each run must have a sampling time of 3 hours; and
- Each run must collect a sample gas volume of 2.5 dscm.

Three sampling runs were conducted using SW-846 Method 0023A on February 7 and 8, 2001. Two runs were collected on February 7, and the third run was conducted on February 8, 2001. Table I presents a summary of the sampling data for the three runs.

SW-846 Method 0023A is the most recent version of the dioxins/furans sampling methodology specified by EPA. The method specifies that the "front half' and "back half ' of the sampling train be recovered and analyzed separately using high-resolution gas chromatography/high resolution gas chromatography (HRGC/HRMS). The Method 0023A samples were analyzed for dioxins and furans by Alta Analytical Laboratory Inc. in El Dorado Hills, California using SW-846 Method 8290, a high resolution GC/MS technique. A field blank was also collected and analyzed as a QA/QC function to allow an assessment of background contamination. The analytical results for the three samples and the field blank are shown in Table 2.

The analytical results for the three samples are converted into 2,3,7,8- TCDD (tetrachloro-dibenzodioxin) Toxicity Equivalents in'Table 3. Table 4 presents the concentrations and mass emission rates of 2,3,7,8- TCDD Equivalents for the three sample runs.

Relevant operating data of Incinerator F-570 were recovered over the three testing periods. A summary of the process data is presented in Table 5.

Attached as appendices to this report are:

- Appendix A - Field Sampling Data Sheets; Sampling Calculations; Sampling Equipment Calibration Data;
- Appendix B - Process Data; and
- Appendix C - Alta Analytical Laboratories Report including Chain-of-Custody Forms.

If you have any questions or comments, don't hesitate to give me a call at 512/419-5317 or you can e-mail me at mike_fuchs@urscorp.com.

Comment ID No. 42 – United States Department of Energy

Comment Summary – Provided comments on data for Department of Energy incinerator Unit ID No. 357.

Comment Response – Made most of the changes as requested.

Comment ID No. 42 – United States Department of Energy

This is in response to the Environmental Protection Agency's (EPA's) Notice of Data Availability, "NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) - Notice of Data Availability," which appeared in the July 2, 2002, *Federal Register* (67 *FR* 44452). Enclosed please find two copies of the Department of Energy's (DOE's) comments concerning DOE's TSCA Incinerator data base, which is one of the data sets that EPA plans to use to propose National Emission Standards for Hazardous Air Pollutants for hazardous waste burning combustors.

The Department appreciates the opportunity to comment on the data base to be used for the analysis. If there are any questions concerning the enclosure, please contact Mal Humphreys of DOE's Oak Ridge Operations Office (865-576-4307; HumphreysMP@oro.doe. gov) or Ted Koss of my staff (202-586-7964; Theodore.Koss@eh.doe. gov).

DOE Comments on the EPA's Notice of Data Availability on Data Bases to be Used for Developing Proposed National Emission Standards for Hazardous Air Pollutants (NESHAP) for Hazardous Waste Combustors
(Federal Register Vol. 67, No. 127, July 2, 2002)
Docket Number RCRA-2002-0019

Department of Energy staff have reviewed EPA's source data sheets for DOE's TSCA Incinerator and have the following comments:

1. On page 1, rows 5 and 9, we suggest changing "K-25" to "ETTP," (which is the abbreviation for the East Tennessee Technology Park).

2. On page 1, row 15, note that the thermal capacity of this unit is 30 million Btu/hr based on design specifications.

3. On page 1, row 16, note that soot blowing is not applicable to this unit.

4. On page 1, row 20, note that polychlorinated biphenyls (PCBs) are treated in this unit.

5. On page 1, row 21, note that the auxiliary fuel is natural gas.

6. On page 1, row 26, the stack gas velocity should be 21.4 ft/sec rather than 6.6 ft/sec.

7 On page 1, row 29, note that the permitting status is Resource Conservation and Recovery Act (RCRA) continuing authority based on submittal of reapplication in 1997.

8. A large amount of data was taken from the Trial Burn Reports and placed in the Excel spread sheets. This was done accurately. Several parameters were converted to alternative units, and these also appear to have been done correctly.

9. On page 6, row 28, the primary organic heating value should be 29,915 BTU/lb rather than 20,915 BTU/lb (for the 2001 Trial Burn).

10. Stack emissions for total hydrocarbons are shown as provided in the 2001 Trial Burn Report. However, Shaw E&I considers these data to not be of regulatory quality and suggests that these not be used for setting hydrocarbon standards. There were problems with the hydrocarbon analyzer during the Trial Burn, and the values appear high in light of the high organic destruction and removal efficiency (DRE) demonstrated.

> EPA appreciates (and agrees with) the commenters concern that the HC levels are higher than that representative of good combustion conditions. The data are kept in the data base. However, the data will be considered with the qualifications noted by the commenter.

11. Metals emissions for the 2001 Trial Burn were converted from units of μg/dscf to pg/dscm. It appears that EPA included a correction for stack oxygen concentration that had already been included in the pg/dscf number.

> No changes are made. The metals levels in ug/dscf as taken from the test report have not been corrected to 7% oxygen; and thus need to be corrected to 7% oxygen when calculating ug/dscm at 7% oxygen. This (the reported metals levels in ug/dscf has not been corrected to 7% oxygen) is clearly indicated by the fact the reported calculation of metal mass emissions in lb/hr is equal to the uncorrected metal concentration multiplied by the uncorrected stack gas flowrate.

12. The solid feed ash content for Runs 2 and 3 of the 1989 data should be 72.99 wt% rather than 0.

Comment ID No. 43 – Lafarge North America

Comment Summary – Provides comments on data for Lafarge cement kiln Unit ID Nos. 302, 322, and 323. The comments include, as attachments A and B, Excel database tables showing recommended changes to the data. In addition, Lafarge requests to consider only trial burn data or RCRA Certification of Compliance (CoC) data when analyzing the data set to determine the HWC MACT limits.

Comment Response – Most changes were made as requested. Many comments concern the handling of feedrate detection limits. The commenter belived that for non-detects, levels were being shown that were two times too high. EPA disagrees with this. For the NODA data base, individual metals (Cd, Cr, Pb, As, etc.) feedrates were shown at full detection limit. Individual metal non-detects were treated at one-half of the detection limit only when calculating SVM, LVM, and chlorine, as discussed in the NODA background document. Thus, the SVM, LVM, and chlorine feedrates were calculated considering non-detects at one-half of the detection limit. Actually, for the revised data base, this issue is not of concern since non-detects are now being considered at the full detection limit.

Comment ID No. 43 – Lafarge North America

Lafarge North America, Inc. (Lafarge) is submitting the attached comments in response to the Environmental Protection Agency's (EPA's) Notice of Data Availability (NODA) (67 FR 44452, July 2, 2002) regarding the NESHAP: Standards of Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II). The NODA requests comments on the databases the EPA plans to use to propose revised standards for the hazardous waste combustor (HWC) NESHAP. This submittal is on the behalf of the two Lafarge facilities; Paulding Ohio and Fredonia Kansas.

As requested in the NODA, Lafarge's comments focus on the accuracy and completeness of the EPA databases that *have been* compiled for the Paulding and Fredonia facilities. Our comments are compiled in two attachments to this letter. Attachment A is a compact disk that contains revised electronic files for each plant and also revised summary files. Paulding's file is *302-revised.xls.* Fredonia's files are *322-revised.xls* and *323-revised.xls.* The summary files are *cl_ek-lafarge.xls, df ck-lafar ge.xls, hg ck-la-farge.xls, pm ck-lafarge.xls, lvm ck-lafarge.xls* and *svm ck-lafarge.xls.* Lafarge reviewed only the Paulding and Fredonia related data in the summary files. The revised cells have been highlighted and a comment added to identify the correction for easy reference. Attachment B provides a written summary of the revisions to the facility specific files.

In addition to this submission, Lafarge requests that USEPA consider only Trial Burn data or RCRA Certification of Compliance (COC) data when analyzing the data set to determine the new HWC MACT limits. Discounting data that were generated under "normal" operating conditions is appropriate considering that those tests were not conducted under worst case scenarios. Trial Burn and COC data represent data that were rated under worst case scenarios and were used to determine plant specific operating limits such as maximum production rates, temperatures, feedrates, and airflow.

EPA agrees that as a first priority, data taken under worst case CoC or trial burn conditions should be used to set MACT standards to address emissions variability. Non-worst case data will be considered only as an alternative when sufficient worst case data are not available, and/or when it is determined that there are no significant differences between worst case and non-worst case data. Additionally, special data handling procedures will be used as appropriate when using non-worst data for setting MACT standards. See the preamble and background documents for the proposed Replacement HWC MACT rule for detailed discussions of how data are handled for setting MACT standards.

Lafarge appreciates the opportunity to provide comments to the NODA and offers to discuss these comments with EPA at the Agency's convenience.

<u>Comment ID No. 44 – United States Department of the Army</u>

<u>Comment Summary</u> – Provided a review of the data for Department of Defense incinerators, included in a “Data Analysis Paper”, which is not included in this document, and a review of metals emissions data from the JACADS incinerators which is included in Comment ID No. 50. Also, additional test report data that was not contained in the database was provided, including a new test report from McAlester Army Ammunition Plant, McAlester Oklahoma, and a new report from the Tooele LIC unit. All other supplied test reports were already contained in the NODA database.

<u>Comment Response</u> – Most suggested changes were related to very general “rounding” issues and conversion of rounded data to conventional units. Changes were made only where specific rounding errors were pointed out and where the rounding considerations alter the data by more than 10%. Other specific changes were made as noticed; the commenter was not always clear in what changes they were requesting. Entered new test report data into the database as requested.

New units that are currently in the process of being constructed and/or in the planning stage are not added to the universe of existing units which are currently burning hazardous waste.

Also, the commenter notes Department of Defense incinerators which are apparently operating at the Sierra Army Depot and Hawthorne Army Ammunition Plant. EPA remains unsure about the status and location of these incinerators. Trial burn test reports were not submitted by the commenter and could not be obtained by EPA. Although these units have been added to the universe of currently operating facilities, they will not influence the MACT standard-setting process absent data on emissions and other information.

<u>Comment ID No. 44 – United States Department of the Army</u>

Enclosed are The Army's comments on the National Emission Standards for Hazardous Waste Combustors, (Final Replacement Standards and Phase II)--Notice of Data Availability, 67 Fed. Reg. 44452 (July 02, 2002).

As requested, The Army is providing EPA additional information on the data included in EPA's Hazardous Waste Combustor Maximum Achievable Control Technology Data Base. This information includes: corrections to data currently in the database, test reports not currently included in this database, and a list of all Army hazardous waste combustors. Enclosure 1 provides a consolidated list of the data tables and test reports contained in the remaining enclosures 2-13.

My technical point of contact for this issue is Mr. Doug Warnock at (703) 693-0549 or email douglas.warnock@hqda.army.mil.

Army Comments on the National Emission Standards for Hazardous Waste Combustors, (Final Replacement Standards and Phase II)Notice of Data Availability, 67 Fed. Reg. 44452 (July 02, 2002)

1. Corrections to Data currently in EPA's Hazardous Waste Combustor Maximum Achievable Control Technology Data Base.

Enclosed with this memo are tables showing the correct values of the test conditions for the following burn tests.

Encl 2 SFIM-AEC-PCC Review of EPA's Hazardous Waste Combustor air emissions data for the demilitarization furnaces: Tooele Army Depot APE 1236M1 DFS, Air Pollution Emission Assessment NO.42-21-0475-91-Trial Burn for DFS - Lake City Army Ammunition Plant, Trial Burn for Explosive Waste Incinerator - Kansas Army Ammunition Plant, McAlester Army Ammunition Plant for APE 1236 DFS

Encl 3 AB-PMCSD-02-0011 Review of JACADS Metals Emissions Data published in the EPA's MACT Database. 12 August 2002 (document and CD)

Encl 4 Trial Burn of the Deactivation Furnace (DFS) Johnston Atoll Chemical Agent Disposal System (JACADS), Johnston Island -July 1998

Encl 5 Trial burn of the Metal Parts Furnace (MPF) Halogenated Waste Performance Test Johnson Atoll Chemical Agent Disposal System (JACADS), Johnston Island - March 2001.

Encl 6 Trial Burn of the Liquid Incinerator (LIC) Johnston Atoll Chemical Agent Disposal System (JACADS) - Johnston Island -July 1997

Encl 7 Trial Burn of the Metal Parts Furnace (MPF) Incinerator JACADS Incinerator Johnston Atoll Chemical Agent Disposal System (JACADS) - Johnston Island-July 1998
Encl 8 Agent GB Mini-Burn Report for the LIC System #lTooele Chemical Agent Disposal Facility-January 1999

Encl 9 Air Pollution Emission Assessment NO. 43-EL-7807-01-APE 1236M1 DFS Health Risk Run-Tooele Army Depot, Tooele, Utah - May 8-10, 2001 and July 12-26, 2000

Encl 10 Air Pollution Emission Assessment NO.42-21-0475-91-Trial Bum for DFS-Lake City Army Ammunition Plant, Independence, Missouri - February 19-March 6, 1991, and April 19-24, 1999.

Encl 11 Air Pollution Emissions Assessment NO.42-21-M663-95-Trial Burn for Explosive Waste Incinerator-Kansas Army Ammunition Plant, Parsons, Kansas - April 19-May 4, 1995 and November 6-13,1995

II. Additional Test Burn reports being submitted

As mentioned in the cover memo to these comments, we are including the following test reports as part of our comments.

Encl 12 Air Pollution Emission Assessment NO.42-EK-1463-97-Air Pollution Emission Assessment Emissions Test for APE 1236 DFS-McAlister Army Ammunition Plant, McAlister, OK-February 12-March 14, 1997

Encl 13 Agent GB Mini-Burn Report for the LIC System # 1Tooele Chemical Agent Disposal Facility-January 1999

Encl 14 Air Pollution Emission Assessment NO.42-21-0475-91-Trial Burn for DFS-Lake City Army Ammunition Plant, Independence, Missouri - October 19-24, 1992

Ill. List of all hazardous waste combustors located at Army installations.

Please use the attached list to update EPA's database "Universe of Hazardous Waste Combustors".

Installation Name'	Waste Source [2]	Stockpile/ spec[3]Off-	New/Existing[4]	Furnace Type[s]
Crane AAP	conventional munitions	stockpile	New	APE 1236
Hawthorne AAP	conventional munitions	stockpile	Existing	APE 2036
Kansas AAP	conventional munitions	stockpile	Existing	APE 1236
Lake City AAP	conventional munitions	off-spec	Existing	APE 1236
McAlester AAP	conventional munitions	stockpile	Existing	APE 1236
Sierra AD/#V	[I]conventional munitions	stockpile	Existing	APE 1236
Tooele AD	conventional munitions	stockpile	Existing	APE 1236
Anniston AD	chemical munitions	stockpile	New	Chemical Furnace
Deseret AD	chemical munitions	stockpile	Existing	Chemical Furnace
Pine Bluff Arsenal	chemical munitions	stockpile	New	Chemical Furnace
Umatilla AD	chemical munitions	stockpile	New	Chemical Furnace
Picatinny Arsenal	propellant	R&D waste	New	Plasma Arc

Radford AAP	propellant	off-spec	Existing	Single Kiln Furnace
Deseret AD	chemical munitions	Test furnace	Existing	Chemical Furnace System
Tooele AD	Conventional munitions	Test furnace	Existing	APE 1236

1 Note on abbrivations: “AAP” is “Army Ammunition Plant”, “AD” is “Army Depot”

2 Note on descriptions of waste sources. "conventional munitions" are munitions commonly used by soldiers in the field, i.e. non-nuclear, non-chemical, or non-biological bullets and other small explosives.

3 Note on difference between "stockpile" and other sources of waste munitions. The munitions "stockpile" are munitions stored by the military for use in future conflicts. When these munitions are no longer useable, the military disposes or "demilitarizes" them. "Off-spec" refers to on site incineration of items manufactured at that site, that were found unacceptable. "R&D waste" is on site incineration of waste material generated during the development, test, or evaluation of explosives. "Test Furnace" is a furnace intended to evaluate modifications to that particular furnace design, not to dispose of munitions.

4 This column indicates if a furnace was "new" or "existing" under the definition of "new" and "existing" given in the Hazardous Waste Combustor MACT published 30 September 2002.

5 The types of furnaces are as follows. "APE 1236" and "APE 2036" are single kiln furnaces. "Chemical Munitions" refers to the furnace system designed to dispose of the chemical munitions stockpile. Each of these systems consists of four furnaces. Each furnace is designed for one purpose: One furnace to incinerate liquid chemical munitions, a second to incinerate chemical munitions that have adhered to metal parts, a third furnace to incinerate all explosives in explosive items associated with the chemical round (i.e. bursters), and a fourth furnace that incinerates miscellaneous items that have been in contact with chemical weapons (i.e. boxes and pallets).

Comment ID No. 45 – Sunoco, Inc.

Comment Summary – Provided detailed comments on the data for Sunoco boiler ID Nos. 911, 912, 1017, and 2008.

Comment Response – Made most changes as requested.

Comment ID No. 45 – Sunoco, Inc.

Sunoco, Inc. (R&M) ("Sunoco") appreciates this opportunity to provide the following comments after reviewing the subject NODA documents. Sunoco operates three facilities with units in the Phase II category:

- Sunoco Haverhill Plant, Phase II ID Nos. 911 and 912;
- Sunoco Pasadena Plant, Phase II ID No. 1017; and
- Sunoco Frankford Plant, Phase II ID No. 2008.

Please note that Sunoco acquired Aristech Chemical Corporation ("Aristech") effective January 1, 2001, and that the Haverhill and Pasadena plants were formerly operated by Aristech. Our comments have been organized by plant for ease of tracking.

Sunoco Haverhill Plant, Phase II ID Nos. 911 and 912

Phase II ID Nos. 911

Comment 1 - Changes to the Source Description worksheet:

Cell B5 should be Sunoco Inc. (R&M) Haverhill Plant
Cell B12 should be 183 MMBTU/hr (Oil)

Reason:
Change in ownership Reflect capacity with hazardous waste firing. Capacity firing natural gas only is 191 MMBTU/hr.

Attn: Docket ID - RCRA - 2002-0019 Comments of Sunoco Inc. (R&M) Page 2 of 6
Cell B 13 should be 183 Reflect capacity with hazardous waste firing. Capacity firing natural gas only is 191 MMBTU/hr
Cell B22 should be 4.9 Typo
Cell B23 should be 50 Typo
Cell B27 should be Adjusted Tier I Clarification

Comment 2 - Changes to Condition Description worksheet:

Cell B6 should be Radian International LLC
Cell B8 should be May 16, 1995

Cell B9 should be May-95
Cell B 10 should be HHC Waste fuel
Cell B16 should be Radian International LLC
Cell B18 should be May 17-18, 1995
Cell B19 should be May-95
Cell B20 should be HHC Waste fuel
Cell B26 should be Radian International LLC
Cell B28 should be May 18-19, 1995
Cell B29 should be May-95
Cell B30 should be HHC Waste fuel
Cell B36 should be Radian International LLC Cell B38 should be May 19-20, 1995
Cell B39 should be May-95
Cell B40 should be LHC Waste fuel

Reason

All the changes in comment 2 are clarification and correction

Comment 3 - Changes to the Feedstreams worksheet:

Cell X8 should be 117,000
Cell V52 should be 107,100
Cell X52 should be 107,100
Cell Z52 should be 106,600
Cell AB52 should be 106,933
Cell Z93 should be 90,200
Cell H96 should be 3,051
Cell V 135 should be 22,300
Cell X135 should be 21,400
Cell Z135 should be 27,400

Reason:

All changes in comment 3 are typo and correction

Attn: Docket ID - RCRA - 2002-0019 Comments of Sunoco Inc. (R&M) Page 3 of 6

Comment 4 - Changes to Summary Sheet 1: Reason:

Cell M5 should be 183 Reflect capacity with hazardous waste firing. Capacity firing natural gas only is 191 MMBTU/hr.

Comment 5 - Changes to Summary Sheet 2: Reason:

Remove Row 17 This is a duplicate of a previous row.

Note: Marked up copies of the referenced worksheets are provided in Attachment 1.

Comment 6 - The facility conducted a revised certification of compliance test in 1999 and a trial burn in 2001. It should be noted that ENSR was the contractor for the July, 1998 data in the 1999 revised Certification of Compliance test and Radian International was the contractor for the October 1998 data. URS Corporation was the contractor for the 2002 trial burn. Results from these tests are provided in Attachments 2 and 3.

Phase II ID Nos. 912

Comment 7 - Changes to Source Description worksheet: Reason:

Cell B5 should be Sunoco Inc. (R&M) Haverhill Plant
Cell B12 should be 183 MMBTU/hr (Oil)
Cell B 13 should be 183

Reason

Change in ownership Reflect capacity with hazardous waste firing. Capacity firing natural gas only is 191 MMBTU/hr. Reflect capacity with hazardous waste firing. Capacity firing natural gas long is 191 MMBTU/hr

Cell B 18 should be "water, AMS distillation bottoms, etc.) including codes D001, D018 and D035" - Correction
Cell B19 should be "Natural gas or fuel oil" - Correction
Cell B22 should be 6.3 - Typo
Cell B23 should be 50 - Typo
Cell B27 should be Adjusted Tier I - Clarification

Attn: Docket ID - RCRA - 2002-0019 Comments of Sunoco Inc. (R&M) Page 4 of 6

Comment 8 - Changes to Condition Description worksheet:

Cell B8 should be May 20-21, 1995 - Correction
Cell B9 should be May-95 - Correction

Comment 9 - Changes to Feedstreams worksheet:

Cell V8 should be 29,800 - Typo - Used average
Cell X8 should be 32,400 - Typo - Used average
Cell Z8 should be 32,800 -Typo - Used average
Comment -10 - Changes to Summary Sheet 1:

Cell H5 should be "...water, AMS distillation bottoms, etc.) Correction

including codes D001, DO18 and D03 5
Cell J5 should be "Natural gas and fuel oil" Correction
Cell M5 should be 183 Reflect capacity with hazardous waste firing. Capacity firing natural gas only is 191 MMBTU/hr

Comment 11 - Changes to Summary Sheet 2: Reason:
Remove Row 17 This is a duplicate of a previous row.

Note: Marked up copies of the referenced worksheets are provided in Attachment 4.

Comment 12 - The facility conducted a revised certification of compliance test in 1999 and a trial burn in 2001. It should be noted that ENSR was the contractor for the July, 1998 data in the 1999 revised Certification of Compliance test and Radian International was the contractor for the October 1998 data. URS Corporation was the contractor for the 2002 trial burn. Results from these tests are provided in Attachments 2 and 3.

Comment 13 - Attachment 5 is a summary of the emissions data classifications for the 1995, 1998 and 2001 tests.

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<u>Sunoco Inc. (R&M)'s Pasadena Plant, Phase II ID No. 1017</u>

Comment 14 - Changes to Source Description worksheet:
Cell B5 should be Sunoco Inc. (R&M) Pasadena Plant Change in ownership

Comment 15 - Changes to the Feedstreams worksheet:

Cell J11 should be 0.088	Reported value
Cell J 18 should be 0.022	Reported value
Cell F21 should be 14,415	Typo
Cell H21 should be 14,739	Typo
Cell J21 should be 14,489	Typo
Cell L21 should be 14,548	Typo
Cell F22 should be 3.2	Typo
Cell H22 should be 3.2	Typo
Cell J22 should be 3.4	Typo
Cell L22 should be 3.33	Typo
Cell H60 should be 0.032	Typo
Cell F65 should be 4.0	Reported value
Cell H65 should be 4.0	Typo
Cell J65 should be 3.4	Typo
Cell L65 should be 3.8	Typo
Cell J95 should be 0.068	Reported value

Cell J102 should be 0.196 Reported value

Note: Marked up copies of the referenced worksheets are provided in Attachment 6.

Comment 16 - The facility conducted a trial burn in March of 2000. Results from that testing is provided in Attachment 7.

Sunoco, Inc. Frankford Plant, Phase II ID No. 2008

Comment 17 - Changes to the Source Description worksheet: Reason:

Cell B 13 should be 260 MMBTU/hr.	Typo
Cell B 14 should be 4 times per day	Procedure change
Cell B23 should be 133 feet	Typo

Comment 18 - Changes to the Condition Description worksheet: Reason:

Cell B8 should be June 23, 1999	Typo
Cell B9 should be June - 99	TypoAttn: Docket ID -

RCRA - 2002-0019 Comments of Sunoco Inc. (R&M) Page 6 of 6

Comment 19 - Changes to the Stack Gas Emissions worksheet:

Cell M10 should be 114.5	Updated calculation
Cell Ml 1 should be 56.4	Updated calculation
Cell G27 should be 1.46	Corrected calculation
Cell 127 should be 1.60	Corrected calculation
Cell K27 should be 1.84	Corrected calculation
Cell M27 should be 1.64	Corrected calculation
Cell G28 should be 0.43	Corrected calculation
Cell 128 should be 0.52	Corrected calculation
Cell K28 should be 0.34	Corrected calculation
Cell M28 should be 0.42	Corrected calculation
Cell G29 should be 2.32	Corrected calculation
Cell 129 should be 2.65	Corrected calculation
Cell K29 should be 2.52	Corrected calculation
Cell M29 should be 2.47	Corrected calculation
Cell G30 should be 10.7	Corrected calculation
Cell 130 should be 46.4	Corrected calculation
Cell K30 should be 11.0	Corrected calculation
Cell M30 should be 18.6	Corrected calculation
Cell G31 should be 7.5	Corrected calculation
Cell 131 should be 31.0	Corrected calculation
Cell K31 should be 5.3	Corrected calculation
Cell M31 should be 11.7	Corrected calculation

No changes made. Values look OK as contained in NODA data base.

Comment 20 - Changes to the Feedstreams worksheet:

Cell L8 should be 15,997	Corrected calculation
Cell J9 should be 1642.54	Typo
Cell L9 should be 1456	Updated calculation

Thank you once again for this opportunity to provide these comments and please do not hesitate to call me at 215 977-3857 should you have any questions regarding this submittal.

Comment ID No. 46 – Rohm and Haas Company

Comment Summary – Comments provided on data for Rhom and Haas boiler ID No. 741.

Comment Response – Made most of the requested changes. Note that non-detects are now being treated in the revised database at the full detection, as opposed to one-half the detection limit in the NODA. This is consistent with the comments suggestions.

Comment ID No. 46 – Rohm and Haas Company

Rohm and Haas Company - Louisville Plant is providing comments on the database referenced in the above Notice of Data Availability for liquid-fuel boilers. In particular, these comments are for the data presented for Phase II ID No. 741 which is the BIF unit located at the Louisville Plant located in Louisville, Kentucky.

There were several errors discovered in the "feed" worksheet for this unit in the database.

Attached is a listing of the errors discovered. Enclosed is a diskette containing the database information for this unit. You will notice an additional worksheet entitled "feed - corrected". That worksheet has the information contained in the original "feed" worksheet with the corrections / changes listed in the attachment incorporated and they are highlighted in red.

If you would like to discuss any of these corrections, please contact me at (502) 449-5289 or by E-mail at JTheriac@rohmhaas.com .

Rohm and Haas Company - Louisville Plant appreciates the opportunity to make comments on the data provided on our facilities in the database and encourages USEPA to make every effort ensure that correct data and information are used to establish these important MACT regulations.

ATTACHMENT 1

The following comments are associated with the data given in the database for the above identified BIF unit for the worksheet entitled "feed". A diskette with the database information for only this unit is enclosed with this submission.

1. The ash values given in cells D15 and E15 are slightly low. The values given in the referenced compliance recertification test report were 607 g/hr and 5,803 g/hr instead of the listed 600 g/hr and 5,780 g/hr.

2. The value listed for hexavalent chromium for run 1 in cell 123 is apparently a typo. It should be 1.8 g/hr and not 18 g/hr.

3. The individual run values for thallium should be more correctly reported as 111 g/hr for run I (cell 127), 113 g/hr for run 2 (cell k27) and 113 *g/hr* for run 3 (cell m27). These are the

values listed in the referenced compliance recertification test report. This will make the average value make more sense.

4. The condition average used for ash in cell 035 is half of the values listed for the runs. As stated in the NODA, USEPA took half since values are reported as non-detect. However, for evaluating data for establishing MACT emission limits, USEPA has no way of knowing whether the actual value is half of the detection value or nearly the detection value. Consequently, the actual average should be the proper reported value with less than indication.

5. The condition average value for Barium in cell D39 has an incorrect formula (references wrong cell). The value should be 13 ug/dscm and not 3 ug/dscm.

6. The condition average value for Beryllium in cell D40 has an incorrect formula (references wrong cell). The value should be 7 ug/dscm and not 34 ug/dscm.

7. The condition average value for Cadmium in cell D41 has an incorrect formula (references wrong cell). The value remains at 13 ug/dscm only by a fluke.

8. The condition average value for Chromium (trivalent) in cell D42 has an incorrect formula (references wrong cell). The value should be 479 ug/dscm and not 7 ug/dscm.

9. The condition average value for Chromium (hexavalent) in cell D43 has an incorrect formula (references wrong cell). The value should be 24 ug/dscm and not 13 ug/dscm.

10. The condition average value for Lead in cell D44 has an incorrect formula (references wrong cell). The value should be 683 ug/dscm and not 479 ug/dscm.

Attention: Docket Number RCRA-2002-0019
Rohm and Haas Company - Louisville Plant EPA ID No.: KYD 006 390 017 Phase II ID No.: 741 Page 2

11. The condition average value for Mercury in cell D45 has an incorrect formula (references wrong cell). The value should be 3 ug/dscm and not 24 ug/dscm.

12. The condition average value for Silver in cell D46 has an incorrect formula (references wrong cell). The value should be 34 ug/dscm and not 683 ug/dscm.

13. The value for hexavalent chromium in cell 143 for run 1 should be corrected when correction mentioned in Item 2 above is made. Value for cell 143 should be 21 ug/dscm.

14. The condition average used for mercury in cell 045 is half of the values listed for the runs. As stated in the NODA, USEPA took half since values are reported as non-detect. However, for evaluating data for establishing MACT emission limits, USEPA has no way of knowing

whether the actual value is half of the detection value or nearly the detection value. Consequently, the actual average should be the proper reported value with less than indication.

15. The condition average value for SVM in cell D49 has an incorrect formula (references wrong cells). The value should be 696 ug/dscm and not 348 ug/dscm.

16. The values for runs 1, 2 and 3 for SVM in cells 149, K49 and M49 are half of the values listed for the runs. As stated in the NODA, USEPA took half since values are reported as non-detect. However, for evaluating data for establishing MACT emission limits, USEPA has no way of knowing whether the actual value is half of the detection value or nearly the detection value. Consequently, the actual average should be the proper reported value with less than indication.

17. The condition average value for low volatile metals (LVM) in cell D50 has an incorrect formula (references wrong cells). The data for arsenic, trivalent chromium, hexavalent chromium and mercury are being used for the LVM value. LVM should be the average of only arsenic, beryllium and chromium. In addition, hexavalent chromium should not be added in, since this should be covered by the trivalent chromium number since the value for trivalent chromium is based on a total chromium analysis. The value should be 657 ug/dscm and not 340 ug/dscm.

18. The values for runs 1, 2 and 3 for SVM in cells 149, K49 and M49 are half of the values listed for the runs. As stated in the NODA, USEPA took half since values are reported as non-detect. However, for evaluating data for establishing MACT emission limits, USEPA has no way of knowing whether the actual value is half of the detection value or nearly the detection value. Consequently, the actual average should be the proper reported value with less than indication. The correct values should be 675 ug/dscm (cell 149), 732 ug/dscm (cell k49) and 694 ug/dscm (cell m49). Consequently, the condition average reported in cell 049 should be 700 ug/dscm.

19. The values for runs 1, 2 and 3 for LVM in cells 149, K49 and M49 are half of the values listed for the runs. As stated in the NODA, USEPA took half since values are reported as non-detect. However, for evaluating data for establishing MACT emission limits, USEPA has no way of knowing whether the actual value is half of the detection value or nearly the detection value. Consequently, the actual average should be the proper reported value with less than indication. In addition, the same issue as listed in Item 17 above applies concerning incorrect formulae being used (namely using data for arsenic, trivalent chromium, hexavalent chromium and mercury, instead of data for arsenic, beryllium and chromium). They should be 905 ug/dscm (cell 150), 536 ug/dscm (cell k50) and 517 ug/dscm (cell m50). Consequently, the condition average reported in cell 050 should be 653 ug/dscm.

Comment ID No. 47 – Solite Corporation

Comment Summary – Comments provided on data for lightweight aggregate kilns. Comments were provided in an Excel table format, and are not included in this document. Also, the commenter suggests that: (1) the database must contain permit limits (and MACT limits should be based on permit limits), and (2) the Norlite LWAK which is equipped with a wet scrubber should be in a separate subcategory from the other LWAKs that do not use wet scrubbers because the Norlite LWAK burns different wastes that the other LWAKs.

Comment Response – Made most of the requested changes to the database. One requested change that was not made was moving the condition rating flag for all LWAK PM data to "normal" as opposed to "worst-case" as contained in the NODA data base. The commenter argues that the PM ratings should all be changed to normal because the baghouses were not "detuned" during the testing. EPA does not agree. All PM testing was associated with CoC compliance testing programs, which are conducted under conditions specially designed to simulate worst case operating conditions. For fabric filters this includes maximum stack gas flowrate and minimum baghouse pressure drop. Thus, EPA continues to classify these test conditions as more like worst case than normal. Nonetheless, EPA does acknowledge that it is difficult to practically "detune" a fabric filter during performance testing (for instance compared with an ESP or venturi scrubber, both of which can be more easily "dialed into" lower performance levels by altering unit input power or pressure drop). The fact that it is more difficult to "detune" a fabric filter will be taken into consideration when determining MACT limits for PM. See the proposed Replacement HWC MACT Rule background documents and preamble for more detailed discussions.

Responses to the other MACT issues are discussed below.

Comment ID No. 47 – Solite Corporation

Dear Sir or Madam:

Please find enclosed for filing an original and two copies of the comments of Solite Corporation on the above-referenced Notice of Data Availability.

Questions of a general nature regarding the comments should be directed to Stephen P. Holt, P.E., Director, Environmental Affairs, GCHI Environmental, 320-D Midland Parkway, Summerville, SC 29485, Tel: (843) 851-5668, Email: sholt@giantcement.com.
Jerepiiah J. Jewett, III

COMMENTS OF SOLITE CORPORATION
NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors(Final Replacement Standards and Phase II) - Notice of Data Availability (67 FR 44452, July 2, 2002)
Docket No. RCRA-2002-0019

Solite Corporation is a manufacturer of lightweight aggregate in Virginia and North Carolina. The Company has burned hazardous waste as fuel since the early 1970's.
These comments consist of (I) corrections of and comments regarding the data bases related to lightweight aggregate kilns (LWAKs); (II) comments regarding the omission of "emission limitation" data from the data bases; and (III) comments regarding subcategorization of the LWAK category.

I. <u>CORRECTIONS TO LWAK DATA SUMMARY SHEETS AND INDIVIDUAL SOURCE DATA SHEETS.</u>
Solite has reviewed the Data Summary Sheets and the Individual Source Data Sheets for Solite sources. Our corrections and comments for the Data Summary Sheets are provided in the attached Table 1. Table 2, which is also attached, includes corrections and comments for the Individual Source Data sheets. We have not submitted test report pages because our review suggests that EPA already has all available Solite test reports. If you have any questions about these data base comments or the test reports upon which they are based please contact Mike Deyo at (804) 673-8625, or <u>mtdeyo@aol.com.</u>

<u>Most of the changes were made as requested.</u>

II. <u>THE DATA BASES REFERENCED IN THE NODA ARE INCOMPLETE BECAUSE THEY DO NOT INCLUDE EMISSION LIMITATION DATA.</u>

EPA proposes to use the data bases presented for public comment in the NODA to develop MACT standards for Hazardous Waste Combustors. However, the data bases as proposed lack critical data and consequently are not adequate for this purpose.

Clean Air Act § 112(d)(3) provides that MACT floors for existing sources are to be no less stringent than the "average emission limitation achieved by the best performing ... sources." The data bases proposed in the NODA consist of emission test results that arguably may be relevant to identification of the "best performing" sources. But the data bases do <u>not</u> include any information concerning the "emission limitations" achieved by such sources. The term "emission limitation" is specifically defined in CAA §302(k) as "a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis . . ." §302 applies this definition to the entire Clean Air Act, including § 112. Therefore, the phrase "average emission limitation achieved" in § 112 must be read as "average *state or federal requirement limiting emissions of a pollutant* achieved," and EPA's data base for each source should include not only emission test data, but also BIF certificate of compliance limits and other applicable federal and state emission limits. If this information is not available in EPA's data bases the Agency will be unable to promulgate MACT standards in accordance with the requirements of § 112.

The context in which it appears strongly suggests that Congress's use of the term "emission limitation" rather than "emission level" or "emission control" in § 112(d)(3) was deliberate, and was intended to invoke the statutory definition. In the same paragraph Congress specified that the floor control for new sources "shall not be less stringent than the *emission control* that is achieved in practice by the *best controlled* similar source, . . ." (emphasis added). The manifest intent of Congress was to base the MACT floor for *new* sources on the best actual degree of emission control achieved by any similar source in practice, whether or not such degree of emission control was mandated by a regulatory requirement. But for *existing* sources Congress did not instruct EPA to base the floor on the average "emission control" achieved by the best "controlled" 12 percent of (or 5) sources. Congress instead used the terms "emission limitation" and "best performing." This choice of words is inexplicable unless Congress intended for floors for existing sources to be based on emission limitations, i.e., actual regulatory requirements, not levels of emission control, and said what it meant.

Solite has addressed, in detail, the issue of the meaning of the term "emission limitation" in the context of CAA § 112(d)(3) in the Final Joint Brief of Industry Petitioners (pp.6-13) and the Final Joint Reply Brief of Industry Petitioners (pp.3-11) in the case which led up to this NODA, *Cement Kiln Recycling Coalition v. E.P.A., 255 F.* 3d 855 (D.C. Cir. 2001), and incorporates herein the relevant portions of such briefs by reference.

> <u>As discussed in detail in the Comment Response Document and other supporting information for the September 1999 HWC MACT rule, as well as in the recent court case that the commenter mentions, EPA continues to disagree with the commenter that MACT limits must be based on permit limits. Instead, EPA continues to base the MACT standards on actual emissions levels achieved in compliance testing, as contained in the HWC data base.</u>

III. <u>EPA SHOULD ESTABLISH A NEW LWAK SUBCATEGORY FOR LWAKS EQUIPPED WITH WET SCRUBBERS.</u>

At 67 Fed. Reg. 44,457, col.3, EPA recognizes that it may be appropriate to establish different MACT standards for subcategories of a source category if the types or concentration of uncontrolled emissions of HAPs are significantly different for a subset of that category because of the design or operation of the sources. In Table I on p. 44,457 potential subcategories are identified, including incinerators equipped with a dry emissions control device. However, no potential subcategories in the LWAK category are identified.

One LWAK, Norlite uses a venturi scrubber and demister in addition to the fabric filters used by other LWAKs. Norlite installed this additional equipment because, although it produces lightweight aggregate, it was designed, operated, and permitted as a hazardous waste incinerator. It also was marketed as an incinerator, joined incinerator trade associations, and pursued waste streams that traditionally have gone to incinerators and not waste fuel burners. Norlite installed venturi scrubber technology that was unnecessary for the traditional waste fuels burned by other LWAKs in order to burn high chlorine and high mercury waste streams typically handled by incinerators. The difference between the waste intended to be burned by Norlite and the waste burned by other LWAKs is shown by the fact that during initial compliance testing Norlite burned waste with concentrations of both chlorine and mercury more than ten times higher than the concentrations found in waste burned by other LWAKs. Norlite's previous owner, the incinerator company American NuKem, installed $40,000,000 in pollution control equipment so that it could burn "kiln-rejected" wastes. An investment of this magnitude clearly would be economically infeasible for an LWAK burning normal waste fuel.

Because Norlite was designed to burn different wastes than other LWAKs, a comparison of Norlite's controlled and uncontrolled emissions during compliance tests with the emissions of such other LWAKs shows that the emissions are significantly different, and provides a compelling basis for subcategorization.

> When using the HWC database to develop MACT standards, EPA will consider a potential subcategory for LWAKs with wet scrubbers, as the commenter suggests. See the proposed Replacement HWC MACT Rule preamble and background supporting documents for detailed discussions of subcategories that were considered and ultimately selected for LWAKs.

Comment ID No. 48 – Merck and Co.

Comment Summary – Comments provides comments on data for Merck Unit ID Nos. 780, 781 and 3021 (comments contained in Excel spreadsheets, and not included in this document). Also, provides comments on general data handling and classification issues.

Comment Response – Made most of the requested changes. Note that Unit ID Nos. 780 and 781 have since stopped burning hazardous waste, have been removed from the HWC data base, and will not be added back in. See below for responses to other issues.

Comment ID No. 48 – Merck and Co.

Merck & Co., Inc. (Merck) is a major manufacturer of human and animal pharmaceuticals. As part of our domestic operations, Merck generates hazardous waste which is treated in on-site incinerators and burned for energy recovery in on-site boilers at three of our facilities. Merck would like to provide the following comments on the Standards for Hazardous Air Pollutants for Hazardous Waste Combustors Notice of Data Availability (NODA), which will be applicable to hazardous waste combustors as set forth at 67 **FR** 44452 on July 2, 2002.

I. Classification of Data

The Hazardous Waste Combustor Maximum Achievable Control Technology (HWC MACT) rulemakings are complex in nature. Merck appreciates the significant effort that is involved with developing such rules. The foundation for these rules is EPA's database. In order for a quality rule to be developed, the database must accurately reflect the conditions and performance of existing sources. Adequate review of data can also require a significant effort on the part of industry. Numerical data from Merck owned and operated sources contained in the database has been reviewed and corrections are presented in Section IV of these comments. In addition, Merck appreciates the fact that the Agency has made an effort to characterize the data included in the database by classifying test conditions. However, since it is still unclear as to how this classification will be used, Merck requests that the Agency remain open to accepting comments on this field once the standard-setting process is more fully developed.

> EPA agrees that the data classification and handling procedure is a significant and critical effort for development of the MACT standards. Stakeholders will have another opportunity to provide detailed comments on these procedures in the proposed Replacement HWC MACT Rule.

II. Database Should Include Intention of Test

As previously mentioned, Merck supports the addition of data characterization to the database. We would like to ensure that this characterization leads to an appropriate use of the data, and setting of achievable emission standards. For example, it is not appropriate to use data from a test case where the constituent measured was not present in the waste feed. For this reason, Merck supports the American Chemistry Council's recommendation that the database be supplemented with fields that characterize which parameters each individual test was intended to evaluate.

> As discussed previously in detail in above comments (including Comment ID No. 37 (American Chemistry Council)), the classification system used in the NODA provides the exact type of information that the commenter is suggesting. EPA does not understand what additional information would be provided by the commenters suggestion.

III. Inclusion of Existing Boilers

Merck has reviewed EPA's database from the July 2"d NODA and has noticed that data from our Rahway, NJ plant has not been included. The Rahway plant has two boilers that burn hazardous waste. The current plan is that these boilers will cease burning hazardous waste after December 31s` of this year. They will continue to operate on conventional fuels until three new boilers are fully commissioned to operate. At that time Merck will initiate RCRA closure procedures according to the approved closure plan. Merck feels that both units should be included in the database because they are still authorized to burn hazardous waste at this time. These boilers were included in the June 2000 NODA and were identified as No. 780 and No. 781. Merck reviewed and commented on the data included for those boilers. Those data corrections were included as Attachment I to our comments on the June 2000 NODA. A copy of those data corrections has also been included as Attachment I of these comments. Since that time, an additional Certification of Compliance Test has been performed for these units. The results of that test are not complete yet but will be sent to EPA for inclusion in the database once they have been finalized.

Merck recognizes that EPA does not intend to obtain copies of data from sources that are no longer burning hazardous waste. EPA also states, that it does not intend to collect data from sources that plan to begin RCRA closure procedures. While Merck agrees that it may be appropriate to exclude units who are *no longer authorized* to burn hazardous waste at the time the NODA was published, Merck believes that all units authorized to burn hazardous waste at the time of data collection and NODA publication should be included in EPA's database. Albeit the Rahway boilers may be shut down before the MACT rule is finalized, we plan to burn hazardous waste in two other boilers in the future and are in the process of permitting these units. It is anticipated that these other boilers will have similar emissions for certain MACT regulated parameters (e.g. PM and metals) as they will have the same feedstocks. Merck requests that the two boilers at our Rahway, New Jersey facility be included in the database and that other similar units be included as well.

> EPA has decided not to add these boilers back into the database. Currently (March 2003) they are not burning hazardous waste, and will not be burning hazardous waste in the future. EPA is not convinced that these shut down boilers will adequately represent the performance of future constructed boilers that will burn hazardous waste at Merck.

IV. Site Specific Comments

In addition to the general comments presented above, Merck has the following specific comments related to the collected data for the Merck owned and operated source in Barceloneta, Puerto Rico. For clarification purposes, revised data has also been included as Attachment II.

ID No. 3021

- Condition Description, 3021 C3 - The condition description for condition 3 should be solid and liquid waste, *not* solid waste only.
- Stack Gas Emissions, 3021C1 - For condition 1, run 2, POHC DRE (chlorobenzene), the emission rate should be 6.35E-05 lb/hr *not* 6.53E-05 lb/hr.
- Stack Gas Emissions, 3 021 Cl - For condition 1, run 2, POHC DRE (naphthalene), the emission rate should be 1.01E-03 lb/hr *not* 1.1E-03 lb/hr.
- Stack Gas Emissions, 3021C1 - For condition 1, run 2, POHC DRE (naphthalene), the DRE should be 99.99987% *not* 99.998005%.
- Stack Gas Emissions, 3021C2 - For condition 2, run 2, POHC DRE (chlorobenzene), the emission rate should be 3.93E-05 lb/hr *not* 3.39E-05 lb/hr.
- Stack Gas Emissions, 3021 C2 - For condition 2, run 2, POHC DRE (chlorobenzene), the DRE should be 99.99979% *not* 99.999817%.
- Stack Gas Emissions, 3021 C3 - For condition 3, run 2, the PM emissions should be 0.0333 gr/dscf *not* 0.033 gr/dscf.
- Stack Gas Emissions, 3021C3 - For condition 3, condition average, the PM emissions should be 0.0326 gr/dscf *not* 0.0325 gr/dscf.
- Feedstream 1, 3021 C3 - The feedrate MTEC Calculations for metals in condition 3 have been calculated using the stack gas flowrate for the PM, HCUCl2 sampling train. The feedrate MTEC Calculations for metals need to be recalculated using the stack gas flowrate for the metals sampling train.
- Feedstream 1, 3021 C4 - The feedrate MTEC Calculations for metals in condition 4 have been calculated using the stack gas flowrate for the PM, HCUCl2 sampling train. The feedrate MTEC Calculations for metals need to be recalculated using the stack gas flowrate for the metals sampling train.

Summ 2, Stack Gas Emissions, 3021C1, The stack gas emission for Cl_2 is referencing the wrong cell. The correct number should be 12.6 ppmv *not* 8.3 ppmv. It should reference emissM 10 *not* emissKl0.

Merck would also like to note that initial test results from the 1996 Trial Bum at the Barceloneta, Puerto Rico facility (referenced above) were extensively reviewed and negotiated with EPA Region 2 staff. Further clarification on this test may be obtained from Donald Wright, EPA Region 2.

Merck appreciates the opportunity to comment on this very important issue. If you have any questions, please contact Ms. Jaime Madrigano, of my staff, at (908) 423-4724.

Comment ID No. 49 – Dow Chemical Co.

Comment Summary – Commenter provides comments on Dow incinerator, boiler, and HCl production furnace ID Nos. 843, 788, 2020, 786, 845, 844, 842, 848,753, 2017, and 600. Other general comments included as well.

Comment Response – Made most of the requested changes to the data. See below for responses to general comments.

Comment ID No. 49 – Dow Chemical Co.

August 16, 2002

RCRA Docket Information Center
U.S. Environmental Protection Agency Headquarters (EPA HQ)
Office of Solid Waste
Ariel Rios Building (5305G)
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0002

RE: Docket Number RCRA-2002-0019

The Dow Chemical Company (Dow) is submitting comments on the proposed database noticed in NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability (67 FR 4452, July 2, 2002). Our comments have been organized by first providing several general comments and following up with comments that are specific to data that is representative of individual facilities.

Dow has reviewed the data which is representative of our facilities and has several concerns about the database. Generally, many errors have been identified in the database from our facilities. After seeing the multitude of errors just from the Dow data, we are greatly concerned that the entire database is flawed. Whether comments are received from others or not, a thorough review of all of the data that will be used for setting the new standards should be done.

> EPA does not agree that the entire data base is flawed. Very few, and generally very minor, errors have been found. For example, literally no significant errors in stack gas emissions levels were found. Errors that have been found are being corrected. Additional chance to comment on the data and its use will be provided in the proposed Replacement HWC MACT Rule.

The organization of the data into the "data_summary_sheets" also gives cause for concern. It is apparent that much of the data is being used out of context of the actual test condition. Risk Burn Data has been included in pools of data that is apparently meant for setting future emission standards. Risk Burn data was collected for a very specific purpose. For this data to now be pooled with data from a trial burn or some other compliance demonstration is mixing data collected for very different reasons. Dow believes that all quality data should be collected into the overall database. Once we begin the process of commingling data for the purpose of establishing an emission standard, we must keep in mind that this data was collected for the purpose of demonstrating compliance with a given regulatory standard rather than setting a future standard.

> The classification scheme for rating test conditions used by EPA is intended to clarify the purpose of each individual testing condition. This classification flag is being carried though all parts of the analyses so as to avoid the very issue the commenter is concerned about.

Dow is concerned that data has been carried into the “data_summary_sheets” from facilities that have already been upgraded to meet the interim standards. This is effectively MACT of MACT. Section 112(d)(3)(A) says, “the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the agency has information)

excluding those sources that have, within 18 months before the emission standards is proposed or within 30 months before such standards is promulgated which is later, first achieved a level of emission rate of emission reduction which complies or would comply.” The later of these two dates is March 30th, 1997 based on the initial promulgation of the rule.

Dow believes that the 1990 CAA amendment is clear. The database is full of data from our facilities and other facilities from well after this date. The Dow Rotary Kiln Incinerator facility in Freeport, Texas has been upgraded with a carbon bed for the purpose of meeting the HWC MACT standards as proposed. Yet, dioxin and furan data from this facility collected in July of 2000 is now included in the database and carried into the “data_summary_sheets” for incinerator dioxin/furans. Many other examples of MACT of MACT data have been carried into the “data_summary_sheets”, and Dow believes that the agency is not adhering to the clear mandate from Congress.

> See detailed response to this issue in above commenters; for example, Comment ID No. 37.

The methodology for establishing emission standards for boilers and industrial furnaces will affect many Dow combustion units. Current emission rate/ feed rate limits for these units are most commonly established as a Tier I limit under the BIF rules. In general, the vast majority of facilities were not aware that testing on their units would be used to set emission limits in the future. Unknowingly, a large number of facilities did not spike metal feeds into their units because they felt that they could live with Tier I emission numbers and not have to set a higher feed rate. Following this logic, the lowest emission numbers to be used to set the MACT standards should be no lower than the Tier I limit. Dow has attached to these comments Compliance Certification Forms from certain BIF units from our Freeport facility (F-11, FTB-603, and F-2A/B).

> <u>As discussed in detail in Comment ID No. 47 (Solite) above, EPA continues to believe that it is not appropriate to use permit limits to set MACT floor standards. Further, test conditions where permit limits (particularly those for feedrates) were "extrapolated" from that demonstrated in the compliance testing have been identified as "in-between" or "not evaluated" because the emissions testing does not truly represent worst case. Emissions levels have not been artificially projected up to the actual permit limits because these levels do not represent actual system performance or desired operating conditions.</u>

Observation of the data_summary_sheets reveals that many facilities are characterized by recently (after March 1997) test report results. Furthermore, a few facilities that were operating during this period have been removed from the database. Dow believes that old data from operating facilities and from closed facilities operating during this period should be included in the pool of data. Again, the mandate from the 1990 CAA amendments is clear. The methodology for establishing standards is dictated by Section 112(d)(3)(A). Without this data from older test results and previously operating facilities, the methodology is flawed and does not meet the mandate.

> <u>As discussed in previous comments above, EPA has not intentionally excluded data from facilities that are expected to be burning hazardous waste at the time of the Replacement MACT Rule. Older data has not been excluded. Data from certain facilities that are projected to stop burning hazardous waste by the time of the HWC MACT rulemaking have been removed as it is not appropriate to consider them for determining the MACT rule.</u>

Additionally, Dow is concerned that EPA's data treatment, if not corrected will be attacked under the new Data Quality Act and that this attack will be successful, invalidating the efforts to complete this important rule. Dow urges EPA air office to fully consider the developing internal procedures related to this new requirement.

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Comments have been prepared by The Coalition for Responsible Waste Incineration (CRWI) and the American Chemistry Council (ACC). Dow participated in the drafting of these comments and agrees with the comments made by each of these parties. Furthermore, Dow hereby incorporates any comment, issue or correction made by CRWI or ACC into the comment made specifically in this letter by The Dow Chemical Company.

Additional corrections and comments have been collected that are specific to each of our incineration and boiler units. This information follows this letter along with copies of the detailed spreadsheets from each of these units. Many corrections have been identified in the database on the detailed spreadsheets. We have highlighted the cells that contain corrections. Also, for you convenience, we have included electronic copies of these files and the corrections are identified by highlighted cells.

Dow feels that the 45 day comment period was inadequate for reviewing the large amount of data presented in this NODA. Review of the detailed data sheet from each of the Dow combustion units is not yet complete. Additional comments on the data representing some of our combustion units may be collected and transmitted as soon as the review is complete (but no later than October 1, 2002).

> EPA has considered all comments that were received after the comment period deadline. EPA has not received any other additional comments from Dow. As mentioned above, there will be opportunity for further comments as part of the proposed HWC MACT Replacement Rule.

Enc: Data CD "Dow Data 8-16-02 NODA"

The following errors are present in the data present for:

Phase I ID No.	354
EPA ID No.	MID000724724
Facility Name	DOW CHEMICAL CO.

The numbers used for metals emissions and for metals removal efficiencies were from condition 1, runs 1 – 4 (354C1R1-4). The metals portion of this run was invalidated due to the analytical lab's failure of analysis on the EPA audit sample. This run was then repeated and the data that should have gone into the database was from condition 5, runs 1-4 (354C5, R1-4). Since our permit writer was allowing extrapolation to our permit limit, none of the metal's emissions shown in condition 5 were close to what would be a worst case scenario. Worst case should be the permit limit that was granted.

Worst case PM emissions for this facility should have been derived from 354C4, R3-5. Runs 1 and 2 showed that we were above our proposed permit limit, so, the feeds were cut back for runs 3 – 5. Although this condition didn't feed the highest amount of ash, it fed a stream that created a fumed silica which is very difficult to remove from the gas stream. This high number is not an anomaly and should not be removed from the database. It is apparent that there is not much correlation with just pounds of ash fed versus PM.

Worst case for chlorine was demonstrated in 354C2, R1-4. This should be the only condition that chlorine emissions and system removal efficiencies should be looked at.

Worst Case emissions from Dow Chemical Company's Midland Kiln should be as follows:

HAP	Condition/Runs	Demonstrated Emission	Emission Limit
PM	Condition 4/ runs 3 - 5	.0193 gr/dscf	.028 gr/dscf
Cl2	Condition 2/ runs 1 - 4	2.4 ppmv	
Antimony	Condition 5/runs 1 - 4	2.6 ug/dscm	43665 ug/dscm*
Arsenic	Condition 5/runs 1 - 4	.6 ug/dscm	13.8 ug/dscm*
Barium	Condition 5/runs 1 - 4	5.3 ug/dscm	43665 ug/dscm*
Beryllium	Condition 5/runs 1 - 4	Did not spike	.11 ug/dscm*
Cadmium	Condition 5/runs 1 - 4	8.9 ug/dscm	42 ug/dscm*
Chromium	Condition 5/runs 1 - 4	4.5 ug/dscm	373 ug/dscm*
Lead	Condition 5/runs 1 - 4	174 ug/dscm	1491 ug/dscm*
Mercury	Condition 5/runs 1 - 4	42.7 ug/dscm	266 ug/dscm*
Silver	Condition 5/runs 1 - 4	4.1 ug/dscm	43665 ug/dscm*
Thallium	Condition 5/runs 1 - 4	Did not spike	43665 ug/dscm*
Hexavalent Chromium	Condition 5/runs 1 - 4	Assumed everything was Hexavalent 4.5 ug/dscm	373 ug/dscm*

4. Air permit limit. Metal feeds during testing was at reduced rates since agency was allowing extrapolation to emission limit once system removal efficiency was determined.

General Comments for TXD008092793 BIF units:

Dow Chemical Texas Operations in Freeport, TX uses Tier III and adjusted Tier I to establish limits for metals emissions, based on site-specific dispersion modeling for the BIF units located here. This is done because most of the metals except for chromium are not found in the feeds to the BIF units and there is no need to establish a higher feed rate. In general, other than chromium, metals have not been spiked during COC tests or trial burns, thus any emission values found in the EPA database for these metals are not representative of worst case conditions. In the cases where chromium was spiked, then the data would be representative of worst case conditions. For the other BIF metals, the Adjusted Tier 1 metals feed rate limits represent worst case emissions limits. These Adjusted Tier 1 metals limits were revised in August 1997 for all the BIF units and are included in the Modeled Emission Rates table which is attached at the end of these comments. These should be included in the EPA database as the worst case emission limits for the BIF units. The worst case emission limits are also specified in the individual comments for each unit.

Specific Comments for TXD008092793 Rotary Kiln:

Phase I ID No.	600
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, Rotary Kiln Incinerator

The data for the Freeport Rotary Kiln Incinerator (Phase I ID no. 600) includes data from the trial burn and risk burns that were conducted in the year 2000. As we have commented previously, these test burns were conducted after the installation of an additional ionizing wet scrubber followed by a carbon bed adsorber. These units were installed for the purpose of meeting the originally proposed HWC MACT Standards. Data from these tests are indicative of that strategy and using this data to re-establish a new standard MACT standard would be creating a MACT standard of facilities modified to meet MACT Standards.

Specific Comments for TXD008092793 BIF Units:

Phase II ID No. 786
EPA ID No. TXD008092793
Facility Name THE DOW CHEMICAL COMPANY, R-30

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 786C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Worst Case Emission Rate
Antimony	300 g/hr
Arsenic	3.6 g/hr
Barium	50,000 g/hr
Beryllium	6.6 g/hr
Cadmium	8.8 g/hr
Chromium	1.3 g/hr
Lead	90 g/hr
Mercury	300 g/hr
Silver	3000 g/hr
Thallium	500 g/hr

786C3 was a risk burn and represented normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No.	788
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, B-824

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 788C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	660 g/hr
Arsenic	4.2 g/hr
Barium	110,000 g/hr
Beryllium	7.6 g/hr
Cadmium	10.1 g/hr
Chromium	1.5 g/hr
Lead	190 g/hr
Mercury	660 g/hr
Silver	6600 g/hr
Thallium	1100 g/hr

788C3 was a risk burn and represented normal combustion conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum combustion conditions.

Phase II ID No.	842
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, FTB-400

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 842C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	300 g/hr
Arsenic	1.7 g/hr
Barium	50,000 g/hr
Beryllium	3.0 g/hr
Cadmium	4.0 g/hr
Chromium	0.6 g/hr
Lead	90 g/hr
Mercury	300 g/hr
Silver	3000 g/hr
Thallium	500 g/hr

842C3 was a risk burn and represented normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No. 843
EPA ID No. TXD008092793
Facility Name THE DOW CHEMICAL COMPANY, B-902

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were only demonstrated for PM in condition 843C1. B-901, B-902, and B-903 use an adjusted Tier I approach to demonstrate compliance with the HCl/Cl_2 and regulated BIF metal standards. For the chlorine/chloride and all of the BIF metals, including chromium, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	330 g/hr
Arsenic	5 g/hr
Barium	56,000 g/hr
Beryllium	9 g/hr
Cadmium	12.1 g/hr
Chromium	1.8 g/hr
Lead	100 g/hr
Mercury	330 g/hr
Silver	3300 g/hr
Thallium	560 g/hr
HCl	100 g/hr
Chlorine	50 g/hr

843C3 was a risk burn and represented slightly above normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No.	844
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, F-2A/B

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections. Several of the corrections have to do with transposed data in the Trial Burn report between run 2 and run 2A.

The trial burns and risk burns that are presented in the EPA database for this unit are not representative of worst case conditions/maximum feed rates for this unit. Condition 844C1 and 844C1A were tests run at minimum temperature to demonstrate 99.99% DRE. They were not intended to represent worst case conditions and do not represent worst case emissions for metals, chlorine/chloride, or ash (PM). The ash listed in 844C1 was not spiked and only represented normal feed rate conditions. Chlorine was not specifically spiked to demonstrate worst case conditions, but instead was part of the ortho-dichlorobenzene (ODCB) used as the Principal Organic Hazardous Constituent (POHC) spike for the Destruction and Removal Efficiency (DRE) test. It did not represent maximum chlorine feed rates. Thus, the Feedrate MTEC Calculations are not correct for 844C1 or 844C1A. Likewise 844C2 was a risk burn and represented slightly above normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Dow did demonstrate maximum/worst case conditions for chlorine/chloride, PM, and hexavalent chromium in a BIF Certification of Compliance test conducted in April 1997. This COC data was used as "Data-in-Lieu of" for the RCRA permit trial burn, but was not included in the database. This Certificate of Compliance report is being submitted as a part of these comments so that the data from these test burn runs can be entered into the database. This test represents worst case conditions for ash, hexavalent chromium, and chlorine/chloride which were either based on spikes or maximum feed rates. The remaining BIF metals were not spiked and thus the data is not representative of maximum emissions for these metals. Worst case metal emissions for are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate

Antimony	250 g/hr
Arsenic	2.8 g/hr
Barium	42,000 g/hr
Beryllium	5.1 g/hr
Cadmium	6.7 g/hr
Chromium	1 g/hr
Lead	75 g/hr
Mercury	250 g/hr
Silver	2500 g/hr
Thallium	420 g/hr

Phase II ID No. 845
EPA ID No. TXD008092793
Facility Name THE DOW CHEMICAL COMPANY, F-210

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 845C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	150 g/hr
Arsenic	0.55 g/hr
Barium	25,000 g/hr
Beryllium	1 g/hr
Cadmium	1.3 g/hr
Chromium	0.2 g/hr
Lead	45 g/hr
Mercury	150 g/hr
Silver	1500 g/hr
Thallium	250 g/hr

845C3 was a risk burn and represented above normal feed rates and normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No. 848
EPA ID No. TXD008092793
Facility Name THE DOW CHEMICAL COMPANY, F-11

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 848C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	150 g/hr
Arsenic	0.55 g/hr
Barium	25,000 g/hr
Beryllium	1 g/hr
Cadmium	1.3 g/hr
Chromium	0.2 g/hr
Lead	45 g/hr
Mercury	150 g/hr
Silver	1500 g/hr
Thallium	250 g/hr

848C3 was a risk burn and represented above normal feed rates and normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No. 849
EPA ID No. TXD008092793
Facility Name THE DOW CHEMICAL COMPANY, F-820A/B

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 849C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	130 g/hr
Arsenic	0.97 g/hr
Barium	22,000 g/hr
Beryllium	1.8 g/hr
Cadmium	2.4 g/hr
Chromium	0.35 g/hr
Lead	40 g/hr
Mercury	130 g/hr
Silver	1300 g/hr
Thallium	220 g/hr

849C5 was a risk burn and represented slightly above normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No.	2017
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, FTB-401 and FTB-402

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for FTB-401 and 402 were demonstrated for chlorine, PM, and hexavalent chromium in condition 2017C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	300 g/hr
Arsenic	1.7 g/hr
Barium	50,000 g/hr
Beryllium	3.0 g/hr
Cadmium	4.0 g/hr
Chromium	0.62 g/hr
Lead	90 g/hr
Mercury	300 g/hr
Silver	3000 g/hr
Thallium	500 g/hr

2017C3 was a risk burn and represented normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Phase II ID No.	2018
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, FTB-603

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

The trial burns and risk burns that are presented in the database for this unit are not representative of worst case conditions/maximum feed rates. Condition 2018C1 was tests run at minimum temperature to demonstrate 99.99% DRE. It was not intended to represent worst case conditions and does not represent worst case emissions for metals, chlorine/chloride, or ash (PM). The ash listed in 2018C1 was not spiked and only represented normal feed rate conditions. Chlorine was not specifically spiked to demonstrate worst case conditions, but instead was part of the ODCB used as the POHC spike for the DRE test. It did not represent maximum chlorine feed rates. Thus, the Feedrate MTEC Calculations are not correct for 2018C1. Likewise 2018C2 was a risk burn and represented slightly above normal conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

Dow did demonstrate maximum/worst case conditions for chlorine/chloride, PM, and hexavalent chromium in a BIF Certification of Compliance test conducted in January 1997. This COC data was used as "Data-in-Lieu of" for the RCRA permit trial burn but was not included in the EPA database. The 1/97 Certificate of Compliance report is being submitted as a part of these comments so that the data from these test burn runs can be entered into the database. This test represents worst case conditions for ash, hexavalent chromium, and chlorine/chloride. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	250 g/hr
Arsenic	2.8 g/hr
Barium	42,000 g/hr
Beryllium	5.1 g/hr
Cadmium	6.7 g/hr
Chromium	1 g/hr
Lead	75 g/hr
Mercury	250 g/hr
Silver	2500 g/hr
Thallium	420 g/hr

Phase II ID No.	2020
EPA ID No.	TXD008092793
Facility Name	THE DOW CHEMICAL COMPANY, F-2820

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, and hexavalent chromium in condition 2020C1. For the rest of the BIF metals, which were not spiked, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Maximum Allowable Emission Rate
Antimony	130 g/hr
Arsenic	1.2 g/hr
Barium	22,000 g/hr
Beryllium	2.2 g/hr
Cadmium	3 g/hr
Chromium	0.44 g/hr
Lead	40 g/hr
Mercury	130 g/hr
Silver	1300 g/hr
Thallium	220 g/hr

2020C3 was a risk burn and represented normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates and stack gas velocity.

MODELED EMISSION RATES (g/hr)

	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Silver	Thallium
B-824, T.O.	660	4.2	110,000	7.6	10.1	1.5	190	660	6,600	1100
B-901, Unit III	330	5	56,000	9.0	12.1	1.8	100	330	3,300	560
B-902, Unit III	330	5	56,000	9.0	12.1	1.8	100	330	3,300	560
B-903, Unit III	330	5	56,000	9.0	12.1	1.8	100	330	3,300	560
R-30, Unit I	300	3.6	50,000	6.6	8.8	1.3	90	300	3,000	500
FTB-400, Unit I	300	1.7	50,000	3.0	4.0	0.60	90	300	3,000	500
FTB-401, Unit V	300	1.7	50,000	3.0	4.0	0.62	90	300	3,000	500
FTB-402, Unit V	300	1.7	50,000	3.0	4.0	0.62	90	300	3,000	500
F-11, Glycerine I	150	0.55	25,000	1	1.3	0.20	45	150	1,500	250
FTB-210, Glycerine I	150	0.55	25,000	1	1.3	0.20	45	150	1,500	250
FTB-603, Allyl Chloride	250	2.8	42,000	5.1	6.7	1.0	75	250	2,500	420
F-2A/B, Allyl Chloride	250	2.8	42,000	5.1	6.7	1.0	75	250	2,500	420
B-33 KILN	670	6.1	110,000	11	15	2.20	200	670	6,700	1110
F-820A/B, TDI	130	0.97	22,000	1.8	2.4	0.35	40.0	130	1,300	220
F-2820, TDI	130	1.2	22,000	2.2	3.0	0.44	40.0	130	1,300	220

The following errors are present in the data present for:

Phase I ID No.	3025
EPA ID No.	TXD000461533
Facility Name	UNION CARBIDE (Dow Chemical Company)

During the risk burn condition, 3052C3, data was collected for CO, PCDD/F, VOC/SVOC and total organics (TOC). The database erroneously reports that total hydrocarbons data was collected during this test condition.

Hexavalent chromium emissions from incinerator are reported for 3025C1. The database indicates that emissions values presented are in the units of micrograms per dry standard cubic foot (ug/dscf). This is not correct; the values shown for 3025C1 appear to be calculated in micrograms per dry standard cubic meter (ug/dscm), not ug/dscf. Data for hexavalent chromium emissions during 3025C1 should be:

Emissions	Units	7%O_2 ?	R1	R2	R3	Cond Avg
Chromium +6	ug/dscf	n	0.12	0.098	0.12	0.11
	ug/dscf	y	0.15	0.12	0.15	0.14

Feedstream data for some constitutents in 3025C1 was erroneously transcribed from the Trial Burn Report:

- Barium feed rates in 3025C1R2 and 3025C1R3 should both be shown as non-detect at 0.03 g/hr.
- Lead feed rates in 3025C1R1 should be shown as non-detect at 0.22 g/hr.

Additionally, for 3025C1, all feed stream chromium contributions are erroneously shown as being from the VA-5 residue. Chromium was injected into the incinerator in the VA-5 residue, and in a chromium spiking solution. While the values shown in the feed stream data do reflect the total chromium contributed from both the VA-5 residue and the spiking solution, this data should indicate presence of a chromium spiking solution, and should distinguish between chromium from the spiking material, and from the VA-5 residue.

These errors in the feedstream data reported, also result in errors in MTEC values, as these are directly calculated from the feedstream data. The following table presents the feedstream descriptions and MTEC calculations as they should be evaluated for 3025C1. Values that are changed from the database are shown in red text.

3025C1	Trial burn	7% O_2?	R1	R2	R3	Cond Avg	R1	R2	R3	Cond Avg	R1
Feedstream description			VA-5 residue	VA-5 residue	VA-5 residue	VA-5 residue	Spike	Spike	Spike	Spike	Total

Feed Rate	g/hr		791473	794895	781993	789454	117009	117072	116972	117018	
Ash	g/hr		3562	3736	3988	3762	11268	11269	11267	11268	1483
Chlorine	g/hr		36	34	38	36					
Antimony	g/hr		nd 0.21	nd 0.2	nd 0.2						
Arsenic	g/hr		1.3	1	1						
Barium	g/hr		nd 0.03	nd 0.03	nd 0.03						
Beryllium	g/hr		nd 0.01	nd 0.01	nd 0.01						
Cadmium	g/hr		nd 0.01	nd 0.01	nd 0.01						
Chromium	g/hr		3.7	4.2	4.3	4.1	9.4	9.5	9.3	9.4	13.1
Lead	g/hr		nd 0.22	nd 0.21	nd 0.22						
Mercury	g/hr		nd 0.01	nd 0.01	nd 0.01						
Nickel	g/hr		1.6	1.7	1.8						
Selenium	g/hr		3.3	2.5	2.2						
Silver	g/hr		nd 0.04	nd 0.04	nd 0.04						
Thallium	g/hr		nd 0.59	nd 0.59	nd 0.59						
Zinc	g/hr		1	6.8	0.59						
Stack Gas Flowrate	dscfm		6048	6245	6230						
Oxygen	%		9.5	9.5	9.5						

Feedrate MTEC Calculations												
Ash	mg/dscm	y										
Chlorine	ug/dscm	y	4267.6	3903.4	4373.1	4181.3						1758.
Antimony	ug/dscm	y	nd 24.9	nd 23.0	23.0	23.6						
Arsenic	ug/dscm	y	154.1	114.8	115.1	128.0						
Barium	ug/dscm	y	nd 3.6	nd 3.4	3.5	3.5						
Beryllium	ug/dscm	y	nd 1.2	nd 1.1	1.2	1.2						
Cadmium	ug/dscm	y	nd 1.2	nd 1.1	1.2	1.2						
Chromium	ug/dscm	y										1552.
Lead	ug/dscm	y	nd 26.1	nd 24.1	25.3	25.2						
Mercury	ug/dscm	y	nd 1.2	nd 1.1	1.2	0.6						
Nickel	ug/dscm	y	189.7	195.2	207.1	197.3						
Selenium	ug/dscm	y	391.2	287.0	253.2	310.5						
Silver	ug/dscm	y	nd 4.7	nd 4.6	4.6	4.6						
Thallium	ug/dscm	y	nd 69.9	nd 67.7	67.9	68.5						
Zinc	ug/dscm	y	118.5	780.7	67.9	322.4						
SVM	ug/dscm	y	14	13	13	13						
LVM	ug/dscm	y	593	598	611	600						

Process information for the incinerator temperature is presented incorrectly. Temperature measurements are in degrees Celsius (°C), not degrees Fahrenheit (°F), as shown.

Data on PCDD/PCDF emissions has several errors:

- The run numbers for each run of 3025C3 are shown incorrectly. The correct run numbers should be Run 1, Run 2 and Run 3, not Run 2, Run 4 and Run 5, as shown;
- The reported value for OCDD during 3025C3R1 is shown incorrectly. The correct value should be 42 pg. Consequently, values for Total 1/2ND and TEQ 1/2ND are also shown incorrectly. These values should be 42 pg, and 0.042 pg, respectively.
- The reported value for 1,2,3,7,8,9-HxCDD during 3025C3R3 is shown incorrectly. The correct value should be 6.5 pg. Consequently, values for Total 1/2ND and TEQ 1/2ND are also shown incorrectly. These values should be 3.3 pg and 0.33 pg, respectively.

As a result of these errors in the PCDD/PCDF emissions, several calculated values will also change:

- PCDD/PCDF (ng in sample) and PCDD/PCDF (ng/dscm @ 7% O2) for 3025C3R1 should be 0.006 and 0.0016, respectively.

- PCDD/PCDF (ng in sample) and PCDD/PCDF (ng/dscm @ 7% O2) for 3025C3R1 should be 0.01 and 0.0023, respectively.
- TEQ Cond Avg should be 0.0023.

The emissions and feed rate data summary contains several errors due to data transcription errors:

- The D/F TEQ (ng/dscm) for 3025C3 should be corrected to 0.0023.
- The %ND for the mercury feedrate characteristics in 3025C2 should be 100%, as all mercury feed measurements were reported as non-detect.
- The HW (ug/dscm) for the LVM feedrate characteristics in 3025C2 should be 472.
- The other (ug/dscm) for the LVM feedrate characteristics in 3025C2 should be 1091.
- The Spike % for the LVM feedrate characteristics in 3025C2 should be 70%.
- The %ND for the LVM feedrate characteristics in 3025C2 should be 0%, as none of the feed or spike measurements were reported as non-detect.
- Moisture for 3025C1, should be 8 percent, not 33 percent, as shown.

The following errors are present in the data present for:

Phase II ID No.	2021
EPA ID No.	TXD000461533
Facility Name	Union Carbide Corporation, A Subsidiary of The Dow Chemical Co.
Location	Texas City, Texas

A_ The following are errors in the trial burn data for the residue boiler 53 under maximum temperature conditions:

1- Run #6 under propionic acid heads, the feed rate for Hg should be 0.04g/hr not 0.4g/hr.

2- Run #11 under propionic acid heads, feed rate in g/hr for some metals is incorrect. Sb should be 0.33 not 0.41, Ba should be 0.08 not 0.091, Be and Cd should be 0.02 not 0.052, and Hg should be 0.02 not 0.52.

3- Run #11 under ethanol residue, the feed rate in g/hr for Be and Cd should be 0.007 not 0.02, and for Hg it should be 0.007 not 0.17.

4- Spiked trial burn runs are erroneously identified as runs #6, 7, 8 and 11, it should be runs #4,5,6, and 11.

5- On run #11 the total spiking material feed rate should be 153038 g/hr not 171037 and the ash feed rate should be 19895 no 19209.

6- The chlorine feed rate in g/hr for runs # 4, 5 6, and 11 should be 45729, 45188, 45984, and 45387, not 45442, 44944, 45722, and 45076.

7- Fuel gas feed rate on run #11 should be 293 MMBtu/hr not 393 as shown.

The following errors are present in the data present for:

Phase I ID No.	3024
EPA ID No.	TXD000017756
Facility Name	Dow Chemical Company

All the data is from the July 1999 Trial Burn. This data is all valid with the exception of the DRE data. The holding times were exceeded for the VOST tubes that were used to collect the DRE data. The DRE burn was re-run in December of 1999. So, the NODA includes the DRE data that does not pass the QA/QC methodologies. Data from other pollutants collected during July 1999 work is valid.

The database includes an error in reporting chromium emission rates and stack concentrations. The agency has substituted the chromium feed rate for the chromium emission rate. The emission rate should be 0.059 g/hr and 0.26 ug/dscm. The database has 149.5 ug/dscm.

Arsenic was not detected in Test Condition 1, and the agency missed that designation as noted for other metals.

Comments for CAD076528678 BIF Unit

Phase II ID No.	851
EPA ID No.	CAD076528678
Facility Name	THE DOW CHEMICAL COMPANY, MS HAF

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the corrections.

Dow Chemical Operations in Pittsburg, CA uses Tier III and adjusted Tier I to establish limits for metals emissions, based on site-specific dispersion modeling for this BIF unit. This is done because most of the metals except for arsenic, cadmium and chromium are not found in the feeds to the BIF unit and there is no need to establish a higher feed rate. In general, other than arsenic, cadmium and chromium, metals have not been spiked during trial burns, thus any emission values found in the EPA database for these metals are not representative of worst case conditions. In the cases where arsenic, cadmium and chromium were spiked, then the data would be representative of worst case conditions. For the other BIF metals, the Adjusted Tier 1 metals feed rate limits represent worst case emissions limits. These Adjusted Tier 1 metals limits were revised in June 2001 for the BIF unit and is included in the table which is attached at the end of these comments. These should be included in the EPA database as the worst case emission limits for the BIF units.

Worst case emissions for this BIF unit were demonstrated for chlorine, PM, arsenic, cadmium and hexavalent chromium in condition 851C1. For the rest of the BIF metals, worst case metal emissions are based on Adjusted Tier 1 feed rate limits as follows:

Metal	Worst Case Emission Rate
Antimony	399 g/hr
Barium	66,500 g/hr
Beryllium	5.4 g/hr
Lead	120 g/hr
Mercury	106 g/hr
Nickel	26,600 g/hr
Selenium	5,321 g/hr
Silver	3,991 g/hr
Thallium	399 g/hr

7851C3 was a risk burn and represented normal operating conditions. The metals, d/f, ash, chlorine/chloride emissions do not represent worst case conditions since it was not carried out at maximum feed rates.

Comments for LAD0041581422 BIF Unit

Phase II ID No.	753
EPA ID No.	LAD0041581422
Facility Name	Union Carbide Corporation, A Subsidiary of The Dow Chemical Co.

In reviewing the EPA database, there were some errors noted for this unit. The excel spreadsheet has been revised and highlighted in yellow to show the correction

<u>Comment ID No. 50 – Washington Demilitarization Company</u>

<u>Comment Summary</u> – Provided comments on metals data from JACADS incinerators ID Nos. 344, 346, 470. Comments included copies of test reports, and excel files with recommended corrections.

<u>Comment Response</u> – Similar to that discussed in detail in Comment ID No. 15, EPA agrees with the commenter that due to the inconsistency and misinterpretation in handling and reporting non-detects at one-half the detection limit in the back half and front half of the metals sampling train, there were some small errors in the metals data in the NODA data base for the JACADS facility. Note that although the errors were large in "percentage", in actual values, the errors were relatively small. However, this is no longer an issue: (1) stack gas emissions non-detects are being treated at the full detection limit; and (2) the JACADS unit is no longer part of the HWC database as this unit is no longer burning hazardous waste and is being decommissioned.

<u>Comment ID No. 50 – Washington Demilitarization Company</u>

Comments on the EPA MACT Emissions Database

Background

On July 2 2002 the EPA published a database of emissions that it intends to use in establishing emissions standards for hazardous waste combustors. EPA had previously published data (Phase 2, June 27, 2000) and sought public comment on the accuracy of the data within the database. The database is being used to establish MACT limits for multiple pollutants including mercury, semi-volatile metals (SVM - lead and cadmium) and low-volatile metals (LVM - arsenic, beryllium and chromium). At least one commenter pointed out errors in the way metals emissions data was manipulated in the database. In the request for comment, the EPA also asked commenters to provide any additional data that should be included in the database. This prompted a review of metals emissions data from JACADS trial burns to assess its accuracy and representativeness.

Summary

The emissions database contains a significant number of errors. These largely appear to be from the use, by the EPA, of summary level information to determine metals concentrations, rather than from examination and use of the front half and back half catch data which, is many instances, is contained in Appendices to the trial burn reports. Emissions of mercury differed from those calculated by the EPA by as much as 99%, SVM by as much as 99% and LVM by as much as 54%. Most, but not all errors resulted in an understatement of emissions. It is quite evident from review of the emissions data contained with in the EPA database, that the database is flawed. The EPA must be required to take a more in-depth look at the TB reports and correct the database before it is used to set MACT standards.

Methodology

The JACADS emissions data files were downloaded from the EPA website. Three files, labeled 344.xls, 346.xls and 470.xls (Excel workbooks) contained the JACADS data. Each workbooks contain a number of spreadsheets providing information about the facility, the number of data reports or test conditions for which data is available and then a series of spreadsheets containing data on emission, feed rates, and operating conditions. Data from the trial burn reports on file were reviewed and compared with the data reported by the EPA. Where summary level reports did not provide data on front half and back half catches, those data were retrieved from the body of the report. Copies of all such data are provided as attachments. New spreadsheets were created within the workbooks showing the analytical data and how those data were manipulated to produce emissions data. Data were blank corrected where a detectable concentration was reported in the blank. Note that if the application of a blank correction resulted in a value less than the reporting limit, the reporting limit was used. A summary level workbook was created containing the revised emissions calculations for each test condition and an overall summary comparing the EPA calculated results against those derived from reexamination of the data.

The database reported results from 1992/1993 trial burns at JACADS but did not use those data to calculate emissions. The attached spreadsheets provide those calculations. Copies of the spreadsheets are provided on the accompanying CD.

A list of the workbooks, new spreadsheets developed and a description of the new sheets developed as a result of this study follows.

344_Corr.xls. This workbook is a copy of the workbook 344.xls downloaded from the web to which new spreadsheets and revised calculations have been added.

Emiss1 344C10 corrected is a new spreadsheet providing detailed analytical results from the June 1997 GB LIC trial burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss1.

Emiss2 344C1 corrected is a new spreadsheet providing detailed analytical results from the July 1992 VX LIC trial burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss2.

Emiss2 344C2 corrected is a new spreadsheet providing detailed analytical results from the June 1991 GB LIC trial burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss2.

Emiss2 344C3 corrected is a new spreadsheet providing detailed analytical results from the February 1993 HD LIC trial burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss2

346_Corr.xls. This workbook is a copy of the workbook 346.xls downloaded from the web to which new spreadsheets and revised calculations have been added.

Emiss1 corrected is a new spreadsheet providing detailed analytical results from the July 1998 GB DFS trial burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss1.

Emiss2 corrected is a new spreadsheet providing detailed analytical results from the June 1992 VX DFS trial burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss2.

470_Corr.xls. This workbook is a copy of the workbook 470.xls downloaded from the web to which new spreadsheets and revised calculations have been added.

Emiss1 470 C10 corrected is a new spreadsheet providing detailed analytical results from the March 2001 MPF Halogenated Plastics Performance Test report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss1.

Emiss1 470 C11 corrected is a new spreadsheet providing detailed analytical results from the August 1999 MPF HD Mortar Trial Burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss1

Emiss1 470 C12 corrected is a new spreadsheet providing detailed analytical results from the February 1998 MPF 8-inch GB projectile Trial Burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss1

Emiss2 470 C1 corrected is a new spreadsheet providing detailed analytical results from the December 1992 MPF HD Ton Container Trial Burn report and recalculating the emissions from that test for comparison with the data contained in the EPA sheet Emiss2

Summary of results.xls is a new workbook containing 4 spreadsheets.

344 results provides a comparison of EPA versus the revised calculated emission values for all the 344 series of test results.

346 results provides a comparison of EPA versus the revised calculated emission values for all the 346 series of test results.

470 results provides a comparison of EPA versus the revised calculated emission values for all the 470 series of test results.

Summary provides a comparison of EPA versus the revised calculated emission values for all the of the test results.

Attachments

Data Package for 344 series tests consisting of extract from the trial burn reports and analytical reports of the metals train analyses. Included in this package are printouts of the revised calculations of emissions.

Data Package for 346 series tests consisting of extract from the trial burn reports and analytical reports of the metals train analyses. Included in this package are printouts of the revised calculations of emissions.

Data Package for 470 series tests consisting of extract from the trial burn reports and analytical reports of the metals train analyses. Included in this package are printouts of the revised calculations of emissions.

Printouts from the workbook *Summary of results*.

<u>Comment ID No. 51 – Chemical Waste Management Inc.</u>

<u>Comment Summary</u> – Provided a copy of the full test report for incinerator ID No. 603 to allow for complete data entry for test conditions 603C12 and 603C13.

<u>Comment Response</u> – EPA greatly appreciates the supplied copy of the incomplete test report. EPA thanks Onyx for assisting in the compilation of a complete and accurate HWC data base.

<u>Comment ID No. 51 – Chemical Waste Management Inc.</u>

Attn: Docket number RCRA-2002-0019
"NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) - Notice of Data Availability (NODA)"

Dear Sir or Madam,

Enclosed is a copy of Volume 1 of the 1998 *Bi-Annual Stack Test/Risk Assessment Test/Trial Burn Report* for the incinerator at Chemical Waste Management's (now Onyx Environmental Services) Port Arthur, Texas facility. This report is submitted to fill in the gaps for 603C12 and 603C13.

During the 1998 trial burn, metals were spiked at average (Test Condition 2) and maximum (Test Condition 1) expected levels. The MREs (metal removal efficiency) determined from these data were then used to extrapolate up to 90% of the allowed emission rates. Test Condition 1, "worst case" for metals, was used to set maximum kiln and SCC Temperatures as a permit condition.

All of the metals, with the one exception of beryllium, were fed entirely as liquids into the burner flame of the SCC in Test Conditions land 2. A portion of the beryllium spiked was fed to the kiln. The feed rate of chlorine was maximized in both test conditions and the chlorine feed rate permit limit was also established from these results.

For Test Conditions land 2, "worst case" organics were fed. The kiln and SCC were operated at minimum temperatures in Test Condition 2, and these data were used to set permit limits.

The 1998 trial bum was the only test where metals were spiked at any appreciable level into the Port Arthur incinerator. There was some spiking in the original 1990 trial bum, but they were at very low levels. During the 1990 trial burn, only surrogates for hazardous wastes were burned.

If you need more clarification you can contact me by phone at 409'736-4116 or E-mail <u>hbverlv(aionyxes.com.</u>

Comment ID No. 52 – Cement Kiln Recycling Coalition

Comment Summary – Provided comments on the data for cement kilns. All comments are documented in the below supplied tables in the "Attachment B". General comments are included in "Attachment A".

Comment Response – Made most of the recommened changes.

Comment ID No. 52 – Cement Kiln Recycling Coalition

August 16, 2002

RCRA Information Center
Office of Solid Waste (5305G)
US EPA (HQ)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460-002

RE: NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) – Notice of Data Availability, Docket No. RCRA-2002-0019

Dear Sir/Madam:

The Cement Kiln Recycling Coalition (CKRC) is a Washington, DC-based trade association representing all cement companies engaged in the use of hazardous waste-derived fuels (HWDF). CKRC also represents companies involved in the collection, processing, management, and marketing of such fuels for use in cement kilns. CKRC's members are extensively regulated by state implementation plan rules, the existing Clean Air Act (CAA) new source performance standard (NSPS) for Portland cement plants codified at 40 CFR Part 60, Subpart F, RCRA rules for burning hazardous waste-derived fuel in boilers and industrial furnaces (BIF rules) codified at 40 CFR Part 266, Subpart H, and standards for owners and operators of hazardous waste treatment, storage, and disposal facilities codified at 40 CFR 263, 264, 265, and 270.

CKRC is submitting the attached comments in response to the Environmental Protection Agency's (EPA's) Notice of Data Availability (NODA) (67 FR 44452, July 2, 2002) regarding the NESHAP: Standards of Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II). The NODA requests comments on the databases the EPA plans to use to propose revised standards for the hazardous waste combustor (HWC) NESHAP.

As requested in the NODA, CKRC's comments focus on the accuracy and completeness of the EPA databases that have been compiled for cement kilns. Our comments are compiled in two attachments to this letter. Attachment A includes CKRC's general comments on the proposed EPA cement kiln database. Attachment B provides facility specific comments. For each facility listed, general comments are provided in bullet form, with specific data corrections provided in a table. CKRC's submittal also includes 21 "marked up" Excel spreadsheet files that include CKRC's comments/corrections to the EPA cement kiln databases for each facility and emissions summary spreadsheets. The corrections listed in Attachment B have been noted in red or highlighted in yellow on the facility-specific Excel spreadsheets.

1001 Connecticut Avenue, N.W., Suite 615 ● Washington, DC 20036 ● (202) 466-6802 ● www.ckrc.org

CKRC appreciates the opportunity to provide comments to the NODA and offers to discuss these comments with EPA at the Agency's convenience.

Sincerely,

Michel R. Benoit
Executive Director

Attachments

Attachment A

CKRC General Comments

Detection Limits

EPA stated in the NODA and the "HWC Data Base Report" that its policy for the treatment of analytes in feedstreams or emissions that were reported below detection limits (non-detect or ND) is to utilize one-half of the detection limit in calculations. CKRC has noted that this policy has not been used consistently by EPA, and CKRC requests that EPA reconsider this policy and use the data at full detection limits for developing the MACT database. The use of full detection limits would be consistent with the methodology typically used by facilities to report their emissions for compliance purposes and the methodology for including MACT regulated parameters in site-specific combustion risk assessments. If EPA adheres to its current policy, CKRC requests that the revised standards be developed such that facilities are allowed to use one-half of the detection limits to demonstrate compliance.

With respect to potential inconsistencies, CKRC noted in several cases that when maximum theoretical emissions concentrations (MTEC) were calculated from feedstream data, the non-detect identifiers were either missing from the pre-MTEC feedstream data (e.g., file 203-CKRC.xls, worksheet feed 1, condition 203C10) or they were dropped from the values after the MTEC calculation (e.g., file 203-CKRC.xls, worksheet feed 2, Condition 203C5). Similar inconsistencies were noted when metals emissions were converted from a mass-per-time basis (i.e., lb/hr) to mass-per-flow basis (i.e., µg/dscm), and when values for SVM and LVM were calculated. Although CKRC attempted to identify and correct these types of potential inconsistencies (using EPA's "½ ND" policy), we request that EPA again review the database and correct these types of problems.

Also, it does not appear that EPA applied its policy for non-detect values when calculating total chlorine. In several cases, HCl and/or Cl_2 emissions values were reported as non-detect. Total chlorine was calculated using full detection values. CKRC attempted to identify all such cases, but did not correct the values using EPA's "½ ND" policy. CKRC requests that EPA review its database and apply a consistent non-detect policy for all analytes in feedstreams and emissions.

> EPA agrees that non-detects should be handled at the full detection limit. This procedure is now used in the revised HWC data base. EPA agrees that there were some inadvertent inconsistencies in how non-detects were treated in the NODA data base, and these have attempted to be fixed in the revised data base.

Calculation of Total Chlorine

Total chlorine was calculated as HCl + 2*Cl_2. The calculation would be more accurate if the HCl value was multiplied by the molar mass ratio between Cl and HCl, as shown below.

$$\left(\frac{35.453}{36.461}\right) HCl + 2\,Cl_2$$

CKRC attempted to identify all such cases in our comments. However, we request that EPA review the data to ensure this factor is applied to all total chlorine calculations.

> <u>EPA disagrees with the recommended conversion for HCl as proposed by the commenter. For determining total chlorine as the sum of HCl and Cl2 when they are both in "parts per million by volume in the stack gas" (ppmv), HCl does not need to be corrected. Total chlorine as ppmv (equivalent as chlorine, Cl) is directly calculated as the sum of HCl (ppmv) and 2 times chlorine gas (ppmv). This is because 1 ppmv of HCl is equal to 1 ppmv of total chlorine (expressed as Cl) -- 1 mole of HCl has 1 mole of total chlorine (as Cl). One mole of any ideal gas has the same volume. The commenter is confusing the situation where HCl and Cl2 are to be added when they are both expressed in mass concentrations (such as mg/dscm). For this case, to get a total chlorine on a mass concentration basis, the suggested molecular weight conversion for HCl would be correct. Further, even if the commenter was correct, this would be of trivial significance with respect to actual chlorine values, and inaccuracies associated with the stack gas measurements.</u>

SRE Calculations

It was difficult to verify all SRE values that were presented in the "Data Summary Sheets" due to calculations not being shown. EPA should show these calculations in the "Individual Data Source Data Sheets" before transferring the values to the Data Summary Sheets. Also, once the data have been corrected to account for all non-detect values and total chlorine calculations, many of the SRE values will need to be updated.

> <u>SREs are calculated simply from the total feedrate MTEC and stack gas emissions level (2 numbers). This is not difficult to verify.</u>

Data Summary Sheets

It is likely that during the development of the revised HWC NESHAP standards, information will be taken directly from the Data Summary Sheets (summary sheets). Therefore, it is important that all information noted or calculated on the Individual Source Data Sheets be accurately transferred to the summary sheets.

CKRC found several discrepancies between the original Individual Data Sheets (before CKRC's corrections) and the summary sheets. The discrepancies found have been noted in red or highlighted in yellow with comment tags on the following spreadsheets that are included with this submittal:

- cl_ck-CKRC.xls
- df_ck-CKRC.xls
- hg_ck-CKRC.xls
- pm_ck-CKRC.xls
- lvm_ck-CKRC.xls
- svm_ck-CKRC.xls

Based on our findings (shown as corrections in Attachment B for the Individual Source Data Sheets), it will be necessary to change the contents of all of the spreadsheets listed. Many of the reasons for the corrections have been discussed above.

CKRC has attempted to identify all transcription errors on the summary sheets and provide corrected values or comments where possible. However, we request that EPA review the summary sheets to ensure that all values therein correspond with data found in the corrected Individual Source Data Sheets.

> EPA agrees that there were some errors in the data summary sheets (inconsistencies between the data summary sheets and the individual source files). These will be corrected. The data summary sheets will be regenerated once the data base has been updated.

Test Classifications on Data Summary Sheets

There are specific identifiers in the database used to classify emissions as normal (N), worst-case (WC), in-between (IB), unknown (U) and not applicable (NA). EPA has classified each stack test ("Condition") in each emission category in this manner. The database does not include any clarification as to why EPA has classified some of the data as unknown. In many cases, the data represent compliance tests for state air permitting requirements. These are typically conducted under normal operating conditions. Some of the unknowns were clearly COC test data. COC tests are typically conducted under worst-case conditions. It is unclear what additional information facilities should provide to EPA to help classify the data.

> There were only a handful of test conditions classified as "unknown". EPA thought it was clear that they were determined as unknown because there was not sufficient information in the copies of the test reports to adequately characterize the conditions. EPA was hoping to get simple clarification or recommendation on how these conditions should be classified. EPA has proceeded to use its best judgement based on available information to reclassify all test conditions that were identified as "unknown" in the NODA.

Attachment B

Cement Facility-Specific Comments

<u>Note</u>: Comments summarized in this attachment can also be located on the Excel spreadsheets accompanying this submittal. Suspect data on the spreadsheets have been highlighted in yellow or red font; corrections have been made, where applicable; and comments have been tagged to the relevant cells.

ASH GROVE – FOREMAN
KILN 1

- Total Cl calculations for Conditions 403C2 and 403C3 need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: $HCl*(35.453/36.4609) + 2*Cl_2$.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
403-CKRC.xls/ emiss 1	403C10 – HCl, run 1	26.51	26.23	Factor of 1500 in denominator was incorrect; replaced with 1516; MW = 36.4609; 0.02405 m^3/gmole were used
403-CKRC.xls/ emiss 1	403C10 – HCl, run 2	31.13	30.80	
403-CKRC.xls/ emiss 1	403C10 – HCl, run 3	18.49	18.29	
403-CKRC.xls/ emiss 1	403C10 – HCl, run 4	17.49	17.31	
403-CKRC.xls/ emiss 1	403C10 – Cl_2, run 1	0.01	0.002	Factor of 750 in the denominator was incorrect; replaced with 2948; MW – 70.906; 0.02405 m^3/gmole were used
403-CKRC.xls/ emiss 1	403C10 – Cl_2, run 2	0.01	0.002	
403-CKRC.xls/ emiss 1	403C10 – Cl_2, run 3	0.01	0.002	
403-CKRC.xls/ emiss 1	403C10 – Cl_2, run 4	0.01	0.002	
403-CKRC.xls/ emiss 1	403C10 – Total Cl, run 1	26.52	25.51	Original calculation counted the hydrogen in HCl as Cl. MW correction factor used
403-CKRC.xls/ emiss 1	403C10 – Total Cl, run 2	31.14	29.95	
403-CKRC.xls/ emiss 1	403C10 – Total Cl, run 3	18.51	17.79	
403-CKRC.xls/ emiss 1	403C10 – Total Cl, run 4	17.51	16.83	
403-CKRC.xls/ emiss 1	403C10 – Pb, run 1	1520.0	1517.0	Changed from a rounded value
403-CKRC.xls/ emiss 1	403C10 – Pb, run 2	2980.0	2985.0	Changed from a rounded value
403-CKRC.xls/ emiss 1	403C10 – Pb, run 3	2470.0	2474.0	Changed from a rounded value
403-CKRC.xls/ emiss 1	403C10 – Pb, run 4	2320.0	2316.0	Changed from a rounded value
403-CKRC.xls/ emiss 1	403C11 – HCl, run 1	18.04	16.37	Factor of 1500 in denominator was incorrect; replaced with 1516; MW = 36.4609; 0.02405 m^3/gmole were used
403-CKRC.xls/ emiss 1	403C11 – HCl, run 2	20.87	20.65	
403-CKRC.xls/ emiss 1	403C11 – HCl, run 3	18.07	17.88	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
403-CKRC.xls/ emiss 1	403C11 – Cl_2, run 1	0.01	0.002	Factor of 750 in the denominator was incorrect; replaced with 2948; MW – 70.906; 0.02405 m^3/gmole were used
403-CKRC.xls/ emiss 1	403C11 – Cl_2, run 2	0.01	0.003	
403-CKRC.xls/ emiss 1	403C11 – Cl_2, run 3	0.01	0.002	
403-CKRC.xls/ emiss 1	403C11 – Total Cl, run 1	18.06	15.92	Original calculation counted the hydrogen in HCl as Cl. MW correction factor used
403-CKRC.xls/ emiss 1	403C11 – Total Cl, run 2	20.89	20.09	
403-CKRC.xls/ emiss 1	403C11 – Total Cl, run 3	18.09	17.39	
403-CKRC.xls/ emiss 1	403C11 – Sampling Train, PM, HCl/Cl_2; Stack Gas Flow Rate, run 1	73988	73998	Typo
403-CKRC.xls/ emiss 1	403C11 – Sampling Train, PM, HCl/Cl_2; Moisture, run 2	32.84	32.46	Typo
403-CKRC.xls/ emiss 1	403C11 – Sampling Train, PM, HCl/Cl_2; Moisture, run 3	32	32.57	Typo
403-CKRC.xls/ emiss 1	403C11 – Sampling Train PCDD/PCDF, Stack Gas Flow Rate, run 1	75507	75057	Typo
403-CKRC.xls/ emiss 1	403C11 – HCl, run 1	33.41	25.81	Factor of 1500 in denominator was incorrect; replaced with 1516; MW = 36.4609; 0.02405 m^3/gmole were used
403-CKRC.xls/ emiss 1	403C11 – HCl, run 2	19.94	15.19	
403-CKRC.xls/ emiss 1	403C11 – HCl, run 3	18.78	15.67	
403-CKRC.xls/ emiss 1	403C11 – Cl_2, run 1	0.01	0.002	Factor of 750 in the denominator was incorrect; replaced with 2948; MW – 70.906; 0.02405 m^3/gmole were used
403-CKRC.xls/ emiss 1	403C11 – Cl_2, run 2	0.01	0.002	
403-CKRC.xls/ emiss 1	403C11 – Cl_2, run 3	0.01	0.002	
403-CKRC.xls/ emiss 1	403C11 – Total Cl, run 1	33.44	25.10	Original calculation counted the hydrogen in HCl as Cl. MW correction factor used
403-CKRC.xls/ emiss 1	403C11 – Total Cl, run 2	19.97	14.77	
403-CKRC.xls/ emiss 1	403C11 – Total Cl, run 3	18.80	15.24	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
403-CKRC.xls/ emiss 1	403C11 – Sampling Train PM, HCl/Cl_2, Moisture, run 1	22.99	29.99	Typo
403-CKRC.xls/ emiss 2	403C1 – HCl, run 1	37.0	44.0	Was 37.0
403-CKRC.xls/ emiss 2	403C1 – HCl, run 2	1.63	46.42	Was 1.63
403-CKRC.xls/ emiss 2	403C1 – HCl, run 3	0.47	58.83	Was 0.47
403-CKRC.xls/ emiss 2	403C1 – HCl, run 4	0.24	43.91	Was 0.24
403-CKRC.xls/ emiss 2	403C1 – Cl_2, run 1	0.00 nd	2.48	Was 0.0028
403-CKRC.xls/ emiss 2	403C1 – Cl_2, run 2	0.00 nd	2.04	Was 0.0019
403-CKRC.xls/ emiss 2	403C1 – Cl_2, run 3	0.00 nd	3.82	Was 0.0014
403-CKRC.xls/ emiss 2	403C1 – Cl_2, run 4	0.00 nd	2.51	Was 0.0020
403-CKRC.xls/ emiss 2	403C1 – Total Cl, run 1	0.38	47.75	Previous calculation counted all HCl as Cl_2. Also, the HCl and Cl_2 ppm numbers changed.
403-CKRC.xls/ emiss 2	403C1 – Total Cl, run 2	1.63	50.51	
403-CKRC.xls/ emiss 2	403C1 – Total Cl, run 3	0.47	66.46	
403-CKRC.xls/ emiss 2	403C1 – Total Cl, run 4	0.24	48.93	

ASH GROVE – FOREMAN
KILN 2

- The LVM and SVM calculations for Condition 228C2 have been switched.

- Total Cl calculations for Conditions 228C10 and 228C2 need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- Several congeners for Runs 5, 6, and 7 on the "df c11" tab were not identified as non-detects, which affected the total and TEQ dioxin/furan calculations. These corrections have been made to the revised spreadsheet for Ash Grove Foreman, Kiln 2.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
228-CKRC.xls/ emiss 1	228C10 – HCl, run 1	19.94	19.73	Corrected the conversion factor to 1516
228-CKRC.xls/ emiss 1	228C10 – HCl, run 2	17.65	17.47	
228-CKRC.xls/ emiss 1	228C10 – HCl, run 3	19.39	19.18	
228-CKRC.xls/ emiss 1	228C10 – Cl_2, run 1	0.01	0.002	Corrected conversion factor to 2948
228-CKRC.xls/ emiss 1	228C10 – Cl_2, run 2	0.01	0.002	
228-CKRC.xls/ emiss 1	228C10 – Cl_2, run 3	0.01	0.002	
228-CKRC.xls/ emiss 1	228C10 – Total Cl, run 1	26.52	25.51	Counted all HCl as Cl and had errors in HCl and Cl_2 calcs
228-CKRC.xls/ emiss 1	228C10 – Total Cl, run 2	19.94	19.18	
228-CKRC.xls/ emiss 1	228C10 – Total Cl, run 3	17.65	16.98	
228-CKRC.xls/ emiss 2	228C1 – SVM, run 2	27.60	27.52	This should be a LVM calculation. Original did not treat beryllium as a ND
228-CKRC.xls/ emiss 2	228C1 – SVM, run 4	8.11	6.91	This should be a LVM calculation. Original did not treat arsenic and beryllium as NDs
228-CKRC.xls/ emiss 2	228C1 – SVM, run 6	14.36	14.30	This should be a LVM calculation. Original did not treat beryllium as ND
228-CKRC.xls/ emiss 2	228C1 – LVM, run 6	315.80	313.75	This should be a SVM calculation. Original did not treat cadmium as a ND
228-CKRC.xls/ emiss 2	228C6 – LVM, run 3	174.04	174.52	Included arsenic as ND - was not accounted for in LVM calculation (½ ND)
228-CKRC.xls/ emiss 2	228C7 – LVM, run 7	181.41	181.01	Arsenic was not treated as ND in original

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
228-CKRC.xls/ sum 2	228C10 – TCl, Other	57516	63680	TCl from coal was not added to this value.

ASH GROVE – FOREMAN
KILN 3

- Total Cl calculations for Conditions 404C1, 404C2 and 404C4 need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.
- Several cogeners for Runs 1, 2, and 3 on the DF C10 tab were not identified as non-detects which affected the total and TEQ dioxin/furan calculations. These corrections have been made to the revised spreadsheet for Ash Grove Foreman, Kiln 3.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
404-CKRC.xls/ emiss 1	404C10 – HCl, run 1	27.92	27.63	Corrected conversion factor from 1500 to 1516
404-CKRC.xls/ emiss 1	404C10 – HCl, run 2	21.87	21.64	
404-CKRC.xls/ emiss 1	404C10 – HCl, run 3	31.46	31.12	
404-CKRC.xls/ emiss 1	404C10 – HCl, run 4	55.23	54.65	
404-CKRC.xls/ emiss 1	404C10 – Cl_2, run 1	4.46	1.13	Corrected conversion factor from 750 to 2948
404-CKRC.xls/ emiss 1	404C10 – Cl_2, run 2	5.94	1.51	
404-CKRC.xls/ emiss 1	404C10 – Cl_2, run 3	5.80	1.48	
404-CKRC.xls/ emiss 1	404C10 – Cl_2, run 4	2.47	0.63	
404-CKRC.xls/ emiss 1	404C10 – Total Cl, run 1	36.84	29.13	HCl and Cl_2 numbers changed; was counting all HCl as Cl_2
404-CKRC.xls/ emiss 1	404C10 – Total Cl, run 2	33.75	24.07	
404-CKRC.xls/ emiss 1	404C10 – Total Cl, run 3	43.06	33.22	
404-CKRC.xls/ emiss 1	404C10 – Total Cl, run 4	60.18	54.40	
404-CKRC.xls/ emiss 1	404C10 – Cr+6, run 1	9.2	9.2	Corrected sample volume from 2.23 to 2.232. No significant change in value noted
404-CKRC.xls/ emiss 1	404C11 – HCl, run 1	36.85	36.46	Corrected conversion factor from 1500 to 1516
404-CKRC.xls/ emiss 1	404C11 – HCl, run 2	59.90	59.26	
404-CKRC.xls/ emiss 1	404C11 – HCl, run 3	35.55	35.17	
404-CKRC.xls/ emiss 1	404C11 – Cl_2, run 1	0.06	0.02	Corrected conversion factor from 750 to 2948
404-CKRC.xls/ emiss 1	404C11 – Cl_2, run 2	0.95	0.24	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
404-CKRC.xls/ emiss 1	404C11 – Cl_2, run 3	4.81	1.22	
404-CKRC.xls/ emiss 1	404C11 – Total Cl, run 1	36.98	35.49	HCl and Cl_2 numbers changed; was counting all HCl as Cl_2
404-CKRC.xls/ emiss 1	404C11 – Total Cl, run 2	61.79	58.11	
404-CKRC.xls/ emiss 1	404C11 – Total Cl, run 3	45.18	36.65	

CONTINENTAL HANNIBAL

- Total Cl calculations for Conditions 319C6 and 319C7 need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- The spreadsheet 204.xls does not have any summary worksheets.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
319-CKRC.xls/ emiss 2	319C2 – Cl_2, run 1	0.20	0.41	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C2 – Cl_2, run 2	0.21	0.45	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C2 – Cl_2, run 3	0.20	0.42	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C2 – Total Cl, run 1	29.13	28.76	Had counted all HCl as Cl
319-CKRC.xls/ emiss 2	319C2 – Total Cl, run 2	26.53	26.29	Had counted all HCl as Cl
319-CKRC.xls/ emiss 2	319C2 – Total Cl, run 3	25.61	25.35	Had counted all HCl as Cl
319-CKRC.xls/ emiss 2	319C4 – HCl, run 1	54.29	53.85	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – HCl, run 2	55.04	54.63	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – HCl, run 3	48.97	48.62	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – HCl, run 4	56.80	56.67	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – HCl, run 5	38.83	38.55	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – Cl_2, run 1	0.16	0.17	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – Cl_2, run 2	0.17	0.17	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – Cl_2, run 3	0.19	0.17	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – Cl_2, run 4	0.16	0.17	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – Cl_2, run 4	0.20	0.20	Corrected conversion factor
319-CKRC.xls/ emiss 2	319C4 – Total Cl, run 1	54.61	52.69	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319C4 – Total Cl, run 2	55.38	53.47	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319C4 – Total Cl, run 3	49.34	47.61	Had counted all HCl as Cl, updated inputs

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
319-CKRC.xls/ emiss 2	319C4 – Total Cl, run 4	57.12	47.33	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319C4 – Total Cl, run 5	39.23	37.89	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319D6 – HCl, run 1	46.53	43.16	Corrected conversion factor
319-CKRC.xls/ emiss 2	319D6 – HCl, run 2	46.53	51.95	Corrected conversion factor
319-CKRC.xls/ emiss 2	319D6 – HCl, run 3	44.66	41.59	Corrected conversion factor
319-CKRC.xls/ emiss 2	319D6 – Cl_2, run 1	0.12	0.12	Corrected conversion factor
319-CKRC.xls/ emiss 2	319D6 – Cl_2, run 2	0.00	ND 0.00	Corrected conversion factor
319-CKRC.xls/ emiss 2	319D6 – Cl_2, run 3	0.12	0.16	Corrected conversion factor
319-CKRC.xls/ emiss 2	319D6 – Total Cl, run 1	46.78	42.20	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319D6 – Total Cl, run 2	54.77	50.52	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319D6 – Total Cl, run 3	45.00	40.75	Had counted all HCl as Cl, updated inputs
319-CKRC.xls/ emiss 2	319D6 – Antimony, run 1	5.02	4.60	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Antimony, run 2	5.00	4.73	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Antimony, run 3	5.00	4.73	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Arsenic, run 1	5.26	4.83	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Arsenic, run 2	5.34	4.93	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Arsenic, run 3	5.24	4.97	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Barium, run 1	4.83	4.43	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Barium, run 2	4.24	3.94	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Barium, run 3	5.24	4.97	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Beryllium, run 1	0.22	0.21	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Beryllium, run 2	0.20	0.18	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Beryllium, run 3	0.21	0.20	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Cadmium, run 1	154.68	142.47	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Cadmium, run 2	156.00	144.22	Taken from Trial Burn Report

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
319-CKRC.xls/ emiss 2	319D6 – Cadmium, run 3	199.95	190.00	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Chromium, run 1	3.13	2.88	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Chromium, run 2	4.19	3.87	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Chromium, run 3	4.49	4.26	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Lead, run 1	920.52	845.76	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Lead, run 2	950.70	866.14	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Lead, run 3	1148.76	855.83	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Mercury, run 1	6.53	6.00	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Mercury, run 2	13.58	12.57	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Mercury, run 3	14.47	13.67	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Nickel, run 1	0.15	0.13	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Nickel, run 2	1.00	ND 0.93	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Nickel, run 3	0.99	ND 0.93	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Selenium, run 1	10.53	ND 9.64	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Selenium, run 2	10.66	ND 9.87	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Selenium, run 3	10.49	ND 9.92	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Silver, run 1	2.77	2.55	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Silver, run 2	5.38	4.98	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Silver, run 3	4.06	3.83	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Thallium, run 1	29.43	ND 27.09	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Thallium, run 2	29.80	ND 27.58	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D6 – Thallium, run 3	29.43	ND 27.75	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	Sampling Train – HCl/Cl_2 and Metals		NEW	No stack parameters were in the original sheets.
319-CKRC.xls/ emiss 2	319D9 – Antimony, run 1	1.08	1.07	Taken from Trial Burn Report

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
319-CKRC.xls/ emiss 2	319D9 – Antimony, run 2	0.47	0.46	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Barium, run 1	2.58	2.57	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Barium, run 2	2.49	2.44	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Barium, run 3	1.94	2.00	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Cadmium, run 1	5.34	5.32	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Cadmium, run 2	5.09	4.98	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Cadmium, run 3	4.13	4.23	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Chromium, run 2	0.93	0.92	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Chromium, run 3	0.22	0.23	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Lead, run 1	190.52	190.30	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Lead, run 2	173.16	169.52	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Lead, run 3	170.52	174.34	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Mercury, run 1	16.81	16.77	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Mercury, run 2	24.52	23.95	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Mercury, run 3	29.24	29.85	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Nickel, run 2	0.63	0.62	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Nickel, run 3	0.47	0.48	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Selenium, run 1	14.03	14.00	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Selenium, run 2	7.94	7.78	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Selenium, run 3	4.96	5.07	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Silver, run 2	0.54	0.53	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Silver, run 3	0.27	0.28	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Thallium, run 1	3.06	3.05	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Thallium, run 2	2.77	2.72	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Thallium, run 3	2.70	2.76	Taken from Trial Burn Report

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
319-CKRC.xls/ emiss 2	319D9 – SVM, run 1		195.62	Updated to reflect changes in individual metal concentrations
319-CKRC.xls/ emiss 2	319D9 – SVM, run 2		174.50	Updated to reflect changes in individual metal concentrations
319-CKRC.xls/ emiss 2	319D9 – SVM, run 3		178.57	Updated to reflect changes in individual metal concentrations
319-CKRC.xls/ emiss 2	319D9 – LVM, run 1		277.17	Updated to reflect changes in individual metal concentrations
319-CKRC.xls/ emiss 2	319D9 – LVM, run 2		274.96	Updated to reflect changes in individual metal concentrations
319-CKRC.xls/ emiss 2	319D9 – LVM, run 3		273.77	Updated to reflect changes in individual metal concentrations
319-CKRC.xls/ emiss 2	319D9 – Sampling Train, Metals, Gas Flow Rate, run 1	122146.5	118900	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Sampling Train, Metals, Gas Flow Rate, run 2	122146.5	121800	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Sampling Train, Metals, Gas Flow Rate, run 3	122146.5	121800	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Sampling Train, Metals, Oxygen, run 1	4.778312	4.3	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Sampling Train, Metals, Oxygen, run 2	4.778312	4.4	Taken from Trial Burn Report
319-CKRC.xls/ emiss 2	319D9 – Sampling Train, Metals, Oxygen, run 3	4.778312	5.1	Taken from Trial Burn Report
319-CKRC.xls/ df 7	319D7-Run1	1.2000	1.3600	From Table 2-5
319-CKRC.xls/ df 7	319D7-Run2	1.4000	1.1600	From Table 2-5
319-CKRC.xls/ df 7	319D7-Run3	1.7000	1.6700	From Table 2-5
319-CKRC.xls/ df 8	319D8-Run1	0.5000	0.5470	From Table 2-6
319-CKRC.xls/ df 8	319D8-Run2	0.6000	0.6200	From Table 2-6
319-CKRC.xls/ df 8	319D8-Run3	0.5000	0.5610	From Table 2-6
319-CKRC.xls/ df 9	319D9-Run1	0.5000	1.1000	From Table 2-7
319-CKRC.xls/ df 9	319D9-Run2	1.2000	0.5370	From Table 2-7
319-CKRC.xls/ df 9	319D9-Run3	1.4500	1.4800	From Table 2-7

GIANT – HARLEYVILLE
KILN 4

- It is not clear in the spreadsheets whether emissions were corrected to 7% O_2 (no calculations are shown).
- Total Cl calculations for Conditions 200C1, 200C4, 200C5, 200C10, and 200C11 need to be corrected. HCl should be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
200-CKRC.xls/ emiss 1	200C11 – Cl2 R1	0.61	nd 0.61	Value found to be below detection limit.
200-CKRC/ emiss 2	200C1 – SVM R2	74.8	67.30	Calculation did not account for Cd below detection limit.
200-CKRC.xls/ emiss 2	200C4 – HCl R2	9.94	0.10	Value found in Table 5-4 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C4 – HCl R3	56.93	0.57	Value found in Table 5-4 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C4 – Cl2 R2	0.19	0.0019	Value found in Table 5-4 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C4 – Cl2 R3	0.23	0.0023	Value found in Table 5-4 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C4 – Be R1	0.09	nd 0.09	Value found to be below detection limit.
200-CKRC.xls/ emiss 2	200C4 – Ni R1	1.00	nd 1.00	Value found to be below detection limit.
200-CKRC.xls/ emiss 2	200C4 – Ni R2	1.10	nd 1.10	Value found to be below detection limit.
200-CKRC.xls/ emiss 2	200C4 – LVM R1	3.63	3.58	Be is below detection limit. Use 1/2 detection limit in calculation.
200-CKRC.xls/ emiss 2	200C5 – HCl R1	4.20	0.04	Value found in Table 5-6 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C5 – HCl R2	11.25	0.11	Value found in Table 5-6 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C5 – Cl2 R1	0.08	0.0008	Value found in Table 5-6 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C5 – Cl2 R2	0.17	0.0017	Value found in Table 5-6 of report. Corrected to 7% O_2.
200-CKRC.xls/ emiss 2	200C5 – LVM R1	1.53	1.50	Be is below detection limit. Use 1/2 detection limit in calculation.
200-CKRC.xls/ emiss 2	200C5 – LVM R2	16.49	16.44	Be is below detection limit. Use 1/2 detection limit in calculation.
200-CKRC.xls/ feed 1	200C10 – Chlorine R1 Raw Matl	6430	672	Value found in CC-4 form

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
200-CKRC.xls/ feed 1	200C10 – Chlorine R2 Raw Matl	7180	678	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C10 – Chlorine R3 Raw Matl	8340	684	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C10 – Feed Rate R1 Spike	[Blank]	1.86E+05	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C10 – Feed Rate R2 Spike	[Blank]	1.87E+05	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C10 – Feed Rate R3 Spike	[Blank]	1.86E+05	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C10 – Arsenic R2 Spike	3700	3670	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C10 – Barium R3 HW Liquid	6000	5990	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C11 – Feed Rate R1 Raw Matl	2.27E+07	2.24E+07	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C11 – Chlorine R1 Raw Matl	3430	305	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C11 – Chlorine R1 Raw Matl	3570	357	Value found in CC-4 form
200-CKRC.xls/ feed 1	200C11 – Chlorine R1 Raw Matl	2940	337	Value found in CC-4 form
200-CKRC.xls/ feed 2	200C4 – Feedrate R1 Waste	12189	12200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R2 Waste	13188.1	13200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R3 Waste	12189	12200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R1 Raw Material	104106	104200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R2 Raw Material	106104	106200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R3 Raw Material	105305	105400	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R1 Coal	3796.6	3800	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R2 Coal	3197.1	3200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C4 – Feedrate R3 Coal	2797.5	2800	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C5 – Feedrate R1 Waste	9191.69	9200	Revised value supplied by facility

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
200-CKRC.xls/ feed 2	200C5 – Feedrate R2 Waste	6793.86	6800	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C5 – Feedrate R1 Raw Material	65940	66000	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C5 – Feedrate R2 Raw Material	56149.2	56200	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C5 – Feedrate R1 Coal	1998.1	2000	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C6 – Feedrate R1 Waste	6394.36	6400	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C6 – Feedrate R2 Waste	5595.07	5600	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C6 – Feedrate R1 Raw Material	53753	53801	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C6 – Feedrate R2 Raw Material	46159.3	46201	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C6 – Feedrate R1 Coal	999.12	1000	Revised value supplied by facility
200-CKRC.xls/ feed 2	200C6 – Feedrate R1 Coal	199.824	200	Revised value supplied by facility
201-CKRC.xls/ emiss 1	201C10 – LVM R2	5.8	5.8	Calculation was corrected (Be is not below detection limit). Final value was not affected.
201-CKRC.xls/ emiss 1	201C10 – LVM R3	9.2	9.2	Calculation was corrected (Be is not below detection limit). Final value was not affected.

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- It is not clear in the spreadsheets whether emissions were corrected to 7% O_2 (no calculations are shown).
- Total Cl calculations for Conditions 201C1, 201C2, 201C10, and 201C11 need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
201-CKRC.xls/ emiss 1	201C11 – Moisture R1	31.15	30.5	Value provided was for the molecular weight of dry gas.
201-CKRC.xls/ emiss 1	201C11 – Moisture R2	30.74	29.8	Value provided was for the molecular weight of dry gas.
201-CKRC.xls/ emiss 1	201C11 – Moisture R3	30.99	30.5	Value provided was for the molecular weight of dry gas.
201-CKRC.xls/ feed 1	201C11 – Lead R1 Spike	19700	[Blank]	Changed from 19700. (Hardcopy form CC-4 is blank, this is assumed to be correct).
201-CKRC.xls/ feed 1	201C11 – Lead R2 Spike	19700	[Blank]	Changed from 19700. (Hardcopy form CC-4 is blank, this is assumed to be correct).
201-CKRC.xls/ feed 1	201C11 – Lead R2 Spike	19700	[Blank]	Changed from 19700. (Hardcopy form CC-4 is blank, this is assumed to be correct).

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- It does not appear that EPA referenced the October 2001 NOD Response for the September 2000 Trial Burn Report (Conditions 203C10 and 203C11). The NOD response included corrections to some of the data from the Sept 2000 Trial Burn Report, such as the Appendix I, Section 8 Process Data tables that show new O_2-corrected CO values.

- In the "source" worksheet of the file 203.xls, note that the facility's name changed 12/01 to Holcim (US) Inc.

- The hazardous waste description in the "source" worksheet of the file 203.xls should not include tires.

- In "emiss 1," Conditions 203C10 and 203C11, the NOx emissions for Runs 1 and 2 (for each Condition) may not be accurate because the monitor was off scale for parts of the runs (range =1000).

- In "emiss 1," Condition 203C10, total chlorine input is calculated incorrectly. During these tests, only the total HCl was measured, not HCl and Cl_2. It appears that EPA inserted a dummy value of 1 ppm for Cl_2 in order to make the spreadsheet work. Expected Cl_2 emissions should be calculated as shown in the NOD response (10/12/2001), question #3, page 2.

- In "emiss 2, " Condition 203C1, 203C4, and 203C5, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: $HCl*(35.453/36.4609) + 2*Cl_2$.

- In "emiss 2, " Condition 203C1, 203C2, and 203C5, LVM calculations need to account for Be emissions below detection limits.

- In "emiss 2," Conditions 203C5 and 203C6, the CO and HC (RA) data are 1-minute averages, which is not consistent with the "emiss 1" worksheet, where CO and HC (RA) were 1-minute maximum data.

- In "emiss 2," Condition 203C5, the Total Cl calculation uses the full non-detect values to determine total chlorine, while the SVM and LVM values use 1/2 of ND values. This is inconsistent.

- In "feed 1" of the file 203.xls, feedstream information for 203C10 did not include all of the data for the spike rates. Only the actual metal feed was accounted for. On the spreadsheet accompanying these comments, new columns have been added to the right of the existing table to represent the mixed HWDF and spike stream. This information was obtained from the COC forms. Feedrate MTEC calculations should be updated to reflect the mixed stream.

- In "feed 1," Condition 203C10, all constituents found in the "Feedrate MTEC Calculations" section should reflect the non-detect values identified in the raw data section above it. These non-detect values should be accounted for (½ ND) in SVM and LVM calculations.

- In "feed 1," Condition 203C10, the Feedrate MTEC "Total" calculations for Runs 1, 2, and 3 referenced the wrong cells.

- In "feed 1," Condition 203C11, the "Haz Waste" feedstream description should be changed to "Haz Waste + Spike."

- In "feed 2," Condition 203C5, all gas flow rates and oxygen values are wrong. The cells in this worksheet reference the wrong cells from the "emiss 2" worksheet. Currently, they reference cells for Condition 203C2 (rows 58 and 60 for flow rates and O_2, respectively). They should reference cells for Condition 203C5 (rows 143 and 145 for flow rates and O_2, respectively).

- In “feed 2,” Condition 203C5, non-detect values for metals emissions were identified when emissions were presented in lb/hr. However, the non-detect metals were not identified when emissions were calculated in terms of µg/dscm. Once they are identified, SVM and LVM emissions need to be recalculated to account for non-detect values.

- In “summ 2,” Condition 203C10, Stack Gas Conditions are for PM and HCl/Cl2 testing, not metals testing.

Spreadsheet/ Worksheet	**Item Description**	**Value Provided**	**Corrected Value**	**Comments**
203-CKRC.xls/ source	APCS Characteristics	4 fields	4 fields in 2 compartments	
203-CKRC.xls/ source	APCS Characteristics	143,000 ft^2	72,360 ft^2	Precipitator surface area is 72,360 ft^2 according to CPT plan.
203-CKRC.xls/ source	Hazardous Wastes	Liq wastes, tires	Liq wastes	Tires are not hazardous wastes
203-CKRC.xls/ emiss 1	203C10 – HC (MHRA), Run 1	20.4	19.9	From Process Data tables (in Oct 2001 NOD Response)
203-CKRC.xls/ emiss 1	203C10 – HC (RA), Run 1	19.9	184.7	From Process Data tables (in Oct 2001 NOD Response). ESP went offline for 3 hours during test 1 with resulting waste fuel shutoff. A single one minute value for CO spiked at the trip before probes could be pulled.
203-CKRC.xls/ emiss 1	203C10 – HC (RA), Run 2	18.9	21.7	From Process Data tables (in Oct 2001 NOD Response).
203-CKRC.xls/ emiss 1	203C10 – HC (RA), Run 3	19.2	35.9	To reflect 10/2000 NOD response
203-CKRC.xls/ emiss 1	203C10 – HCl, Run 1	1.88	1.882	3rd decimal place added to be consistent with stack test report
203-CKRC.xls/ emiss 1	203C10 – HCl, Run 2	4.23	4.229	
203-CKRC.xls/ emiss 1	203C10 – Chromium, Run 3	5.34	5.35	Corrected based on conversion calculations
203-CKRC.xls/ emiss 1	203C10 – Nickel, Run 1	63.1	63/0	
203-CKRC.xls/ emiss 1	203C10 – Nickel, Run 2	117	116	
203-CKRC.xls/ emiss 1	203C10 – Selenium, Run 1	0.12	0.119	
203-CKRC.xls/ emiss 1	203C10 – Selenium, Run 2	0.451	0.450	
203-CKRC.xls/ emiss 1	203C10 – Temperature, Run 1	428	427.5	Changed
203-CKRC.xls/ emiss 1	203C11 – CO (RA), Run 1	384	443	See Trial Burn Report, App. I, Section 8, 1m CO Max.
203-CKRC.xls/ emiss 1	203C11 – CO (RA), Run 2	371	416	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
203-CKRC.xls/ emiss 1	203C11 – CO (RA), Run 3	397	431	
203-CKRC.xls/ emiss 1	203C11 – HC (RA), Run 1	18.7	26	See Trial Burn Report, App. I, Section 8, 1m CO Max.
203-CKRC.xls/ emiss 1	203C11 – HC (RA), Run 2	19	23.7	
203-CKRC.xls/ emiss 1	203C11 – HC (RA), Run 3	19	21.9	
203-CKRC.xls/ emiss 1	203C11 – POHC Feedrate, Run 1	67,977	115,545	See COC Form 4, not just the spiking rate from Tbl. 5-18. However, using this value does not result in the DRE shown in COC form 3. DRE would be 99.9963%.
203-CKRC.xls/ emiss 1	203C11 – DRE, Run 1	99.9937	99.9963	Corrected in accordance to above comment.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
203-CKRC.xls/ feed 1	203C10 – Thermal Feed Rate, Coal, Run 1	79.56	79.6	Changed to reflect CC-4 form
203-CKRC.xls/ feed 1	203C10 – Thermal Feed Rate, Coal, Run 3	221.8	222	
203-CKRC.xls/ feed 1	203C10 – Thermal Feed Rate, Haz Waste, Run 2	284.6	285	
203-CKRC.xls/ feed 1	203C10 – Thermal Feed Rate, Haz Waste, Run 3	254.9	255	
203-CKRC.xls/ feed 1	203C10 – Feed Rate, TDF, Run 2	2.74E+05	2.71E+05	
203-CKRC.xls/ feed 1	203C10 – Chlorine, Spike, Run 3	162,705	164,035	Changed 358.38 lb/hr to 361.31 lb/hr in calculation, per test report
203-CKRC.xls/ feed 1	203C10 – Sb, Coal, Run 1	185.04	< 185.04	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Sb, Coal, Run 2	136.08	< 136.08	
203-CKRC.xls/ feed 1	203C10 – Sb, Coal, Run 3	538.86	< 538.86	
203-CKRC.xls/ feed 1	203C10 – As, TDF, Run 1	0.39	< 0.39	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – As, TDF, Run 3	0.28	< 0.28	
203-CKRC.xls/ feed 1	203C10 – Be, Coal, Run 1	15.42	< 15.42	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Be, Coal, Run 2	11.34	< 11.34	
203-CKRC.xls/ feed 1	203C10 – Be, Raw Matl, Run 1	95.76	< 95.76	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Be, Raw Matl, Run 2	94.80	< 94.80	
203-CKRC.xls/ feed 1	203C10 – Be, Raw Matl, Run 3	96.88	< 96.88	
203-CKRC.xls/ feed 1	203C10 – Be, Haz Waste, Run 1	4.8	< 4.8	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Be, Haz Waste, Run 2	4.9	< 4.9	
203-CKRC.xls/ feed 1	203C10 – Be, Haz Waste, Run 3	4.7	< 4.7	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
203-CKRC.xls/ feed 1	203C10 – Be, TDF, Run 1	0.39	< 0.39	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Be, TDF, Run 2	0.27	< 0.27	
203-CKRC.xls/ feed 1	203C10 – Be, TDF, Run 3	0.28	< 0.28	
203-CKRC.xls/ feed 1	203C10 – Cd, Coal, Run 1	15.42	< 15.42	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Cd, Coal, Run 2	11.34	< 11.34	
203-CKRC.xls/ feed 1	203C10 – Cd, Coal, Run 3	44.91	< 44.91	
203-CKRC.xls/ feed 1	203C10 – Cd, Raw Matl, Run 1	95.76	< 95.76	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Cd, Raw Matl, Run 2	94.80	< 94.80	
203-CKRC.xls/ feed 1	203C10 – Cd, Raw Matl, Run 3	96.88	< 96.88	
203-CKRC.xls/ feed 1	203C10 – Cd, TDF, Run 1	0.39	< 0.39	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Cd, TDF, Run 2	0.27	< 0.27	
203-CKRC.xls/ feed 1	203C10 – Cd, TDF, Run 3	0.28	< 0.28	
203-CKRC.xls/ feed 1	203C10 – Cr, Spike, Run 2	12,894	12,898	Changed 28.4 lb/hr to 28.41 in calculation, per test report
203-CKRC.xls/ feed 1	203C10 – Cr, TDF, Run 1	0.39	< 0.39	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Cr, TDF, Run 2	0.27	< 0.27	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Cr, TDF, Run 3	0.28	< 0.28	
203-CKRC.xls/ feed 1	203C10 – Pb, Spike, Run 1	19,885	19,567	Changed 43.8 to 43.1 lb/hr in calculation, per test report
203-CKRC.xls/ feed 1	203C10 – Pb, Spike, Run 3	20248	20262	Changed 44.6 to 44.63 lb/hr in calculation, per test report
203-CKRC.xls/ feed 1	203C10 – Hg, TDF, Run 1	0.00	< 0.004	Values were below detection limits. Increased from 2 decimals to 3.
203-CKRC.xls/ feed 1	203C10 – Hg, TDF, Run 2	0.00	< 0.003	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Hg, TDF, Run 3	0.00	< 0.003	
203-CKRC.xls/ feed 1	203C10 – Ag, Coal, Run 1	30.84	< 30.84	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Ag, Coal, Run 2	22.68	< 22.68	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Ag, Coal, Run 3	89.81	< 89.81	
203-CKRC.xls/ feed 1	203C10 – Ag, Raw Matl, Run 2	189.60	< 189.60	Values were below detection limits.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
203-CKRC.xls/ feed 1	203C10 – Ag, Raw Matl, Run 3	193.76	< 193.76	
203-CKRC.xls/ feed 1	203C10 – Ag, TDF, Run 1	0.39	< 0.39	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Ag, TDF, Run 2	0.27	< 0.27	
203-CKRC.xls/ feed 1	203C10 – Ag, TDF, Run 3	0.28	< 0.28	
203-CKRC.xls/ feed 1	203C10 – Tl, Coal, Run 1	30.84	< 30.84	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Tl, Coal, Run 2	22.68	< 22.68	
203-CKRC.xls/ feed 1	203C10 – Tl, Coal, Run 3	89.81	< 89.81	
203-CKRC.xls/ feed 1	203C10 – Tl, Raw Matl, Run 1	383.04	< 383.04	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Tl, Haz Waste, Run 2	48.9	< 48.9	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Tl, Haz Waste, Run 3	46.6	< 46.6	
203-CKRC.xls/ feed 1	203C10 – Tl, TDF, Run 1	0.39	< 0.39	Values were below detection limits.
203-CKRC.xls/ feed 1	203C10 – Tl, TDF, Run 2	0.27	< 0.27	
203-CKRC.xls/ feed 1	203C10 – Tl, TDF, Run 3	0.28	< 0.28	
203-CKRC.xls/ feed 1	203C11 – Thermal Feed Rate, Coal, Run 2	2.20E+00	2.24E+01	Values were below detection limits.
203-CKRC.xls/ feed 2	203C5 – Heating Value, Coal, R1	8443.23	12098	See 1996 report Vol. 1, tab 12 (table titled Calculation of heat input rate).
203-CKRC.xls/ feed 2	203C5 – Heating Value, Coal, R2	8318.9	11442	See 1996 report Vol. 1, tab 12 (table titled Calculation of heat input rate).
203-CKRC.xls/ feed 2	203C5 – Heating Value, Coal, R3	8877.45	11594	See 1996 report Vol. 1, tab 12 (table titled Calculation of heat input rate).
203-CKRC.xls/ feed 2	203C5 – Chlorine, Coal, R2	0	16.47	Zero was used when the report summary showed values of "0" for Cl in certain coal samples. However, report reveals detection limits of Cl = 1000 ppm. New entries were calculated using this value.
203-CKRC.xls/ feed 2	203C5 – Chlorine, Coal, R3	0	15.4341	
203-CKRC.xls/ feed 2	203C5 – Chlorine, Raw Material, R3	0	192.48578	Zero was used when the report summary showed values of "0" for Cl in certain KF samples. However, report reveals detection limits of Cl = 1000 ppm. New entries were calculated using this value.
203-CKRC.xls/ feed 2	203C5 – Cadmium, Coal, R2	0	0.0028	Zero was used when the report summary showed values of "0" for Cd in certain coal. However, report reveals detection

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
203-CKRC.xls/ feed 2	203C5 – Cadmium, Coal, R3	0	0.00262	limits of Cd = 0.17 ppm. New entries were calculated using this value.
203-CKRC.xls/ feed 2	203C5 – Cadmium, Raw Material, R1	0	0.032198	Zero was used when the report summary showed values of "0" for Cd in certain KF samples. However, report reveals detection limits of Cd = 0.17 ppm. New entries were calculated using this value.
203-CKRC.xls/ feed 2	203C5 – Cadmium, Raw Material, R2	0	0.03227	
203-CKRC.xls/ feed 2	203C5 – Cadmium, Raw Material, R3	0	0.03272	
203-CKRC.xls/ process 1	203C10	Combustion Cham Temp	Max Combustion Cham Temp	See COC for description.
203-CKRC.xls/ process 1	203C10	ESP Power	Min ESP Power	
203-CKRC.xls/ process 1	203C11	Combustion Cham Temp	Min Combustion Cham Temp	
203-CKRC.xls/ process 1	203C11	ESP Inlet Temp (RA)	Max ESP Inlet Temp (RA)	
203-CKRC.xls/ process 1	203C11	ESP Inlet Temp (MHRA)	Max ESP Inlet Temp (MHRA)	
203-CKRC.xls/ process 1	203C11, Run 5	2395	2394	To reflect test report Section 8.

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- In the “source” worksheet of 204.xls, note that the facility’s name changed 12/01 to Holcim (US) Inc.

- In “emiss 2,” Conditions 204C2, 204C5, 204C6, 204C7, 204C8, 204C9, 204B2, and 204B3, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- In “feed 2,” Condition 204B3, non-detect values for metals emissions were identified when emissions were presented in lb/hr. However, not all non-detect metals were identified when emissions were calculated in terms of µg/dscm. Once they are identified, SVM and LVM emissions need to be recalculated to account for non-detect values (currently, none of the LVM/SVM calculations account for non-detects, even if they were correctly identified).

- The spreadsheet 204.xls does not have any summary worksheets.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
204-CKRC.xls/ source	APCS Characteristics	4 ESPs in series?, 18 fields, SCA = 350	4 ESPs in Parallel, 20 fields, SCA = 675 KVA	
204-CKRC.xls/ source	Gas Velocity (ft/sec)	12.3	38.2	
204-CKRC.xls/ emiss 2	204B2 – Antimony, run 2	1.83	1.82	Changed based on value found in Appendix B (Table 2-13 of stack test report).
204-CKRC.xls/ emiss 2	204B2 – Barium, run 1	7.29	7.28	
204-CKRC.xls/ emiss 2	204B2 – Barium, run 2	8.32	8.33	
204-CKRC.xls/ emiss 2	204B2 – Chromium, run 3	4.38	4.37	
204-CKRC.xls/ emiss 2	204B2 – Chromium (Hex), run 1	0.29	0.28	
204-CKRC.xls/ emiss 2	204B2 – Lead, run 1	35.64	35.78	
204-CKRC.xls/ emiss 2	204B2 – Lead, run 2	35.48	35.43	
204-CKRC.xls/ emiss 2	204B2 – Lead, run 3	28.97	28.85	
204-CKRC.xls/ emiss 2	204B2 – Mercury, run 1	6.29	6.28	
204-CKRC.xls/ emiss 2	204B2 – Mercury, run 2	6.00	6.01	Changed based on value found in Appendix B (Table 2-13 of stack test report).
204-CKRC.xls/ emiss 2	204B2 – Selenium, run 1	36.11	36.19	
204-CKRC.xls/ emiss 2	204B2 – Selenium, run 2	25.18	25.30	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
204-CKRC.xls/ emiss 2	204B2 – Selenium, run 3	3.77	14.32	
204-CKRC.xls/ emiss 2	204B2 – SVM, run 1	36.12	36.26	Value changed due to correction of lead emissions.
204-CKRC.xls/ emiss 2	204B2 – SVM, run 2	36.84	36.80	Value changed due to correction of lead emissions.
204-CKRC.xls/ emiss 2	204B2 – SVM, run 3	29.52	29.41	Value changed due to correction of lead emissions.
204-CKRC.xls/ emiss 2	204B2 – LVM, run 3	4.89	4.88	Value changed due to correction of chromium emissions.
204-CKRC.xls/ emiss 2	204B3 – Antimony, run 2	1.93	1.92	Value changed based on value found in Appendix B (Table 2-15 of stack test report).
204-CKRC.xls/ emiss 2	204B3 – Barium, run 1	12.27	12.26	
204-CKRC.xls/ emiss 2	204B3 – Barium, run 2	16.61	16.65	
204-CKRC.xls/ emiss 2	204B3 – Barium, run 3	12.86	12.82	
204-CKRC.xls/ emiss 2	204B3 – Cadmium, run 1	20.15	20.17	
204-CKRC.xls/ emiss 2	204B3 – Cadmium, run 2	14.66	14.77	
204-CKRC.xls/ emiss 2	204B3 – Chromium, run 3	8.98	8.99	
204-CKRC.xls/ emiss 2	204B3 – Chromium (Hex), run 2	0.22	0.21	
204-CKRC.xls/ emiss 2	204B3 – Chromium (Hex), run 3	0.20	0.21	
204-CKRC.xls/ emiss 2	204B3 – Lead, run 1	404.47	404.18	
204-CKRC.xls/ emiss 2	204B3 – Lead, run 2	344.49	344.88	
204-CKRC.xls/ emiss 2	204B3 – Lead, run 3	282.18	282.95	
204-CKRC.xls/ emiss 2	204B3 – Mercury, run 1	11.84	11.86	
204-CKRC.xls/ emiss 2	204B3 – Mercury, run 2	9.03	9.05	
204-CKRC.xls/ emiss 2	204B3 – Nickel, run 3	3.78	3.78	
204-CKRC.xls/ emiss 2	204B3 – Selenium, run 1	53.37	53.39	Value changed based on value found in Appendix B (Table 2-15 of stack test report).
204-CKRC.xls/ emiss 2	204B3 – Selenium, run 2	49.11	49.09	
204-CKRC.xls/ emiss 2	204B3 – Selenium, run 3	31.97	31.91	Value changed based on value found in Appendix B (Table 2-15 of stack test report).
204-CKRC.xls/ emiss 2	204B3 – Thallium, run 1	2.46	2.47	

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
204-CKRC.xls/ emiss 2	204B3 – Thallium, run 2	1.70	1.69	
204-CKRC.xls/ emiss 2	204B3 – Thallium, run 3	1.82	1.82	
204-CKRC.xls/ emiss 2	204B3 – SVM, run 1	424.62	424.35	Value changed due to corrections to cadmium and lead emissions
204-CKRC.xls/ emiss 2	204B3 – SVM, run 3	306.54	306.30	Value changed due to corrections to lead emissions
204-CKRC.xls/ emiss 2	204B3 – LVM, run 3	9.81	9.82	Value changed due to corrections to chromium emissions
204-CKRC.xls/ emiss 2	204B4 – PM, run 1	0.02552	0.0256	Value found in Table 2-1 of report
204-CKRC.xls/ feed 2	204C9 – Feedrate, Raw Material, run 1	866417	870826	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Feedrate, Raw Material, run 3	795869	804687	
204-CKRC.xls/ feed 2	204C9 – Feedrate, Tires, run 1	4144.69	4564	
204-CKRC.xls/ feed 2	204C9 – Feedrate, Tires, run 2	4475.384	5534	
204-CKRC.xls/ feed 2	204C9 – Feedrate, Organic Liquid Spike, run 1	[blank]	668.2	
204-CKRC.xls/ feed 2	204C9 – Feedrate, Organic Liquid Spike, run 2	[blank]	668.2	
204-CKRC.xls/ feed 2	204C9 – Feedrate, Organic Liquid Spike, run 3	[blank]	668.0	
204-CKRC.xls/ feed 2	204C9 – Heating Value, Tires, run 1	13438.88	13454.38	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Heating Value, Tires, run 2	14412.17	14402.91	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Coal, run 1	19.4	19.62	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Coal, run 2	18.6	19.29	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Coal, run 3	18.6	19.18	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Raw Material, run 1	431.31	174.17	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Raw Material, run 2	412.26	168.43	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Raw Material, run 3	394.62	160.94	Value found in CC-4

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
204-CKRC.xls/ feed 2	204C9 – Chlorine, Liquid Waste, run 1	861.999	864.212	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Liquid Waste, run 3	1022.93	1025.15	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Tires, run 1	5.27	6.0	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Tires, run 2	5.4	6.4	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Tires, run 3	4.3	2.6	Value found in CC-4; sample is ND
204-CKRC.xls/ feed 2	204C9 – Chlorine, Organic Liquid Spike, run 1	570	569	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Organic Liquid Spike, run 2	570	569	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine, Organic Liquid Spike, run 3	570	569	Value found in CC-4
204-CKRC.xls/ feed 2	204C9 – Chlorine (ug/dscm), Tires, run 3	4141.187	nd 2540.239	Corrected value should be identified as below detection limit.
204-CKRC.xls/ feed 2				
204-CKRC.xls/ feed 2	204B1 – Feed Rate, Organic Liquid Spike, run 1	[blank]	605.10	Value found in CC-4
204-CKRC.xls/ feed 2	204B1 – Feed Rate, Organic Liquid Spike, run 2	[blank]	604.07	Value found in CC-4
204-CKRC.xls/ feed 2	204B1 – Feed Rate, Organic Liquid Spike, run 3	[blank]	604.07	Value found in CC-4
204-CKRC.xls/ df c9	204C9 – TEQ, total full ND, run 2	7.245	7.172434	Different from stack test report

HOLCIM – HOLLY HILL
KILN 1

- In the "source" worksheet of 205.xls, note that the facility's name changed 12/01 to Holcim (US) Inc.

- In "emiss 1," Conditions 205C10, metals emissions have been corrected for 7% O_2. However, several metals that were reported below detection limits have not been identified. Calculations for SVM need to account for Pb emissions that are below detection limits.

- In "emiss 2," Conditions 205C1, 205C5, and 205C8, and "emis 1," Condition 205C10, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- In "emiss 2," Condition 205C5, the LVM calculation needs to account for Be emissions below detection limits.

- In the "feed 1" and "feed 2" worksheets, it is not clear why EPA used data from CC-3 and CC-4 forms for some values but test report data for other values on these worksheets? For example, CC forms were used for material feed rates and heating values, but not for some metal feed rates (listed in g/hr).

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
205-CKRC.xls/ emiss 1	205C10 – Cu R2	15.1	nd 15.1	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Cu R3	14.1	nd 14.1	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Pb R1	216	nd 216	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Pb R2	250	nd 250	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Pb R3	274	nd 274	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Ni R3	4.11	nd 4.11	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Se R1	8.35	nd 8.35	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Ag R1	2.8	nd 2.8	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Ag R3	2.1	nd 2.1	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Tl R1	1.12	nd 1.12	Value is below detection limit

205-CKRC.xls/ emiss 1	205C10 – Tl R2	1.12	nd 1.12	Value is below detection limit
205-CKRC.xls/ emiss 1	205C10 – Tl R3	4.29	nd 4.29	Value is below detection limit
205-CKRC.xls/ feed 1	205C10 – Feed Rate, Liq Waste, R1	6.61E+06	6.83E+06	Per CC-4 form
205-CKRC.xls/ feed 1	205C10 – Heating Value, Liq Waste, R1	14183	11587	Value found in Table 3-3 of report
205-CKRC.xls/ feed 1	205C10 – Heating Value, Liq Waste, R2	14895	16712	Value found in Table 3-3 of report
205-CKRC.xls/ feed 1	205C10 – Heating Value, Liq Waste, R3	16813	13354	Value found in Table 3-3 of report
205-CKRC.xls/ feed 1	205C10 – Chlorine, Raw Material, R1	64,000	63,958	Per CC-4 forms
205-CKRC.xls/ feed 1	205C10 – Chlorine, Raw Material, R2	64,500	64,604	Per CC-4 forms
205-CKRC.xls/ feed 1	205C10 – Chlorine, Raw Material, R3	65,500	65,461	Per CC-4 forms
205-CKRC.xls/ feed 1	205C10 – Thermal Feed Rate, Liq Waste, R1	2.06E+02	1.74E+02	Different from CC-4
205-CKRC.xls/ feed 1	205C10 – Thermal Feed Rate, Liq Waste, R2	2.17E+02	2.43E+02	Different from CC-4
205-CKRC.xls/ feed 1	205C10 – Thermal Feed Rate, Liq Waste, R3	2.45E+02	1.94E+02	Different from CC-4
205-CKRC.xls/ feed 1	205C10 – Nickel, Spike, R1	[Blank]	2902.99	Value provided by facility
205-CKRC.xls/ feed 1	205C10 – Nickel, Spike, R2	[Blank]	2902.99	Value provided by facility
205-CKRC.xls/ feed 1	205C10 – Nickel, Spike, R3	[Blank]	2902.99	Value provided by facility

HOLCIM – HOLLY HILL
KILN 2

- In the "source" worksheet of 206.xls, note that the facility's name changed 12/01 to Holcim (US) Inc.

- In "emiss 2," Conditions 206C1, 206C5, and 206C7, and "emis 1," Condition 206C10, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- In "feed 2," Condition 206C5, non-detect values for metals emissions were not identified when emissions were presented in lb/hr (they were either left blank or reported as "0"). Corrected values are provided in the table below. The non-detect values need to be identified when emissions are calculated in µg/dscm. Also, SVM and LVM emissions need to be recalculated to account for non-detect values.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
206-CKRC.xls/ emiss 1	206C10 – Sb, R1	3.16	nd 3.16	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – As, R1	1.09	nd 1.09	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – As, R2	0.536	nd 0.536	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – As, R3	1.25	nd 1.25	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Ba, R1	10.2	nd 10.2	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Be, R1	0.047	nd 0.047	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Be, R2	0.071	nd 0.071	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Be, R3	0.207	nd 0.207	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Pb, R1	965	nd 965	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Ni, R1	3.66	nd 3.66	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Hg, R1	37.5	nd 37.5	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Hg, R2	48.3	nd 48.3	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Ag, R1	0.72	2.72	Revised value provided by facility
206-CKRC.xls/ emiss 1	206C10 – Ag, R2	4.11	nd 4.11	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Tl, R1	10.8	nd 10.8	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Tl, R2	17.7	nd 17.7	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Tl, R3	16.5	nd 16.5	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Sb 7% O_2, R2	nd 2.8	2.8	Value is NOT below detection limit.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
206-CKRC.xls/ emiss 1	206C10 – Sb 7% O_2, R3	nd 0.2	0.2	Value is NOT below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Ba 7% O_2, R1	9.9	nd 9.9	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Pb 7% O_2, R1	938.2	nd 938.2	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Ni 7% O_2, R1	3.6	nd 3.6	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Hg 7% O_2, R1	36.5	nd 36.5	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Hg 7% O_2, R2	47.6	nd 47.6	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Ag 7% O_2, R2	4.1	nd 4.1	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Tl 7% O_2, R1	10.5	nd 10.5	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Tl 7% O_2, R2	17.5	nd 17.5	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – Tl 7% O_2, R3	17.6	nd 17.6	Value is below detection limit.
206-CKRC.xls/ emiss 1	206C10 – SVM, R1	943.1	474.0	All nd values were not considered in calculation.
206-CKRC.xls/ emiss 1	206C10 – LVM, R1	3.3	2.7	All nd values were not considered in calculation.
206-CKRC.xls/ emiss 1	206C10 – LVM, R2	4.1	3.9	All nd values were not considered in calculation.
206-CKRC.xls/ emiss 1	206C10 – LVM, R3	11.6	10.9	All nd values were not considered in calculation.
206-CKRC.xls/ emiss 2	206C6 – 1,1,1-Trichloroethane, DRE, R1	99.99997	99.99996	Revised values provided by facility.
206-CKRC.xls/ emiss 2	206C6 – 1,1,1-Trichloroethane, DRE, R2	99.99989	99.99985	Revised values provided by facility.
206-CKRC.xls/ feed 1	206C10 – As, R2, Spike	1510.52	766.57	Revised values provided by facility.
206-CKRC.xls/ feed 1	206C10 – As, R3, Spike	1510.52	766.57	Revised values provided by facility.
206-CKRC.xls/ feed 1	206C10 – Ni, R1, Spike	[Blank]	6010.1	Revised values provided by facility.
206-CKRC.xls/ feed 1	206C10 – Ni, R2, Spike	[Blank]	6010.1	Revised values provided by facility.
206-CKRC.xls/ feed 1	206C10 – Ni, R3, Spike	[Blank]	6010.1	Revised values provided by facility.
206-CKRC.xls/ feed 2	206C5 – Feedstream, R1, Liquid Waste	[Blank]	24599	Value was missing
206-CKRC.xls/	206C5 –	[Blank]	23798.8	Value was missing

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
feed 2	Feedstream, R2, Liquid Waste			
206-CKRC.xls/ feed 2	206C5 – Feedstream, R3, Liquid Waste	[Blank]	24198.8	Value was missing
206-CKRC.xls/ feed 2	206C5 – Heating Value, R1, Liquid Waste	[Blank]	14602	Value was missing
206-CKRC.xls/ feed 2	206C5 – Heating Value, R2, Liquid Waste	[Blank]	12399.7	Value was missing
206-CKRC.xls/ feed 2	206C5 – Heating Value, R3, Liquid Waste	[Blank]	13401.5	Value was missing
206-CKRC.xls/ feed 2	206C5 – Chlorine, R1, Raw material slurry	0	nd 14602	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Chlorine, R2, Raw material slurry	0	nd 12399.7	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Chlorine, R3, Raw material slurry	0	nd 13401.5	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Chlorine, R1, Liquid Waste	[Blank]	224.1	Value was missing
206-CKRC.xls/ feed 2	206C5 – Chlorine, R2, Liquid Waste	[Blank]	153.98	Value was missing
206-CKRC.xls/ feed 2	206C5 – Chlorine, R3, Liquid Waste	[Blank]	353.3	Value was missing
206-CKRC.xls/ feed 2	206C5 – Antimony, R1, Liquid Waste	[Blank]	0.22	Value was missing
206-CKRC.xls/ feed 2	206C5 – Antimony, R2, Liquid Waste	[Blank]	0.317	Value was missing
206-CKRC.xls/ feed 2	206C5 – Antimony, R3, Liquid Waste	[Blank]	0.223	Value was missing
206-CKRC.xls/ feed 2	206C5 – Arsenic, R1, Liquid Waste	[Blank]	nd 0.023	Value was missing. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Arsenic, R2, Liquid Waste	[Blank]	nd 0.0022	Value was missing. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Arsenic, R3, Liquid Waste	[Blank]	nd 0.024	Value was missing. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Beryllium, R1, Liquid Waste	[Blank]	nd 0.0068	Value was missing. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Beryllium, R2, Liquid Waste	[Blank]	nd 0.0065	Value was missing. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Beryllium, R3,	[Blank]	nd 0.0069	Value was missing. Non-detect noted.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
	Liquid Waste			
206-CKRC.xls/ feed 2	206C5 – Cadmium, R1, Coal	0	nd 0.0058	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Cadmium, R2, Coal	0	nd 0.0064	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Cadmium, R3, Coal	0	nd 0.0075	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Cadmium, R2, Raw material slurry	0	nd 0.181	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Cadmium, R3, Raw material slurry	0	nd 0.175	"Zero" value corrected. Non-detect noted.
206-CKRC.xls/ feed 2	206C5 – Cadmium, R1, Liquid Waste	[Blank]	0.227	Value was missing
206-CKRC.xls/ feed 2	206C5 – Cadmium, R2, Liquid Waste	[Blank]	0.212	Value was missing
206-CKRC.xls/ feed 2	206C5 – Cadmium, R3, Liquid Waste	[Blank]	0.478	Value was missing
206-CKRC.xls/ feed 2	206C5 – Chromium, R1, Liquid Waste	[Blank]	1.81	Value was missing
206-CKRC.xls/ feed 2	206C5 – Chromium, R2, Liquid Waste	[Blank]	3.43	Value was missing
206-CKRC.xls/ feed 2	206C5 – Chromium, R3, Liquid Waste	[Blank]	2.32	Value was missing
206-CKRC.xls/ feed 2	206C5 – Lead, R1, Liquid Waste	[Blank]	6.42	Value was missing
206-CKRC.xls/ feed 2	206C5 – Lead, R2, Liquid Waste	[Blank]	10.3	Value was missing
206-CKRC.xls/ feed 2	206C5 – Lead, R3, Liquid Waste	[Blank]	6.58	Value was missing
206-CKRC.xls/ feed 2	206C6 – Feedrate, R1, Liquid Waste	20789.4	20599	Revised value provided by facility.
206-CKRC.xls/ feed 2	206C6 – Feedrate, R2, Liquid Waste	20591	20399	Revised value provided by facility.
206-CKRC.xls/ feed 2	206C6 – Feedrate, R3, Liquid Waste	20591	20399	Revised value provided by facility.
206-CKRC.xls/ feed 2	206C6 – Heating value, R1, Liquid Waste	11015.2	11100	Revised value provided by facility.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
206-CKRC.xls/ feed 2	206C6 – Heating value, R2, Liquid Waste	10781.4	10900	Revised value provided by facility.
206-CKRC.xls/ feed 2	206C6 – Heating value, R3, Liquid Waste	10975.7	11100	Revised value provided by facility.

KEYSTONE – BATH
(APPLIES TO BOTH KILNS)

- HCl and Cl_2 emissions for Kilns 1 and 2 during the 1999 Trial Burn (207C11 and 208C11) are listed in grams per second (g/s), then converted to parts per million by volume (ppmv) and corrected to 7% oxygen. The formula that converts the g/s emissions to ppmv uses a factor of 750. The correct factor should be approximately 3000.

  However, it would be more appropriate to list the ppmv value that appears in Table B-1 of the test report. This value can be directly corrected to 7% O_2 without using conversion factors. Corrections that should be made to the spreadsheet are shown in the Table below.

- No metals emissions data are included in the spreadsheets for the December 1999 Trial Burn for Kilns 1 and 2 (207C11 and 208C11). The emission test reports did contain metals emissions data.

- The feedstream chromium concentrations are for total chromium, including hexavalent chromium. In the feedstream data for Kiln 1 and Kiln 2 during the 1998 BIF test (207C10 and 208C10), the chromium values shown appear to double count the hexavalent chromium component in the total chromium feed rates.

- No feedstream data are included in the spreadsheet for the November 1996 Compliance Test for Kilns 1 and 2 (207C3, 208C3) and the December 1999 Trial Burn for Kilns 1 and 2 (207C11, 208C11). The emission test reports did contain feedstream data.

- The dioxin and furan emissions results reported in the spreadsheets differ from those found in the stack test reports because EPA has utilized a value of 1/2 of the detection limit for the congeners that were not detected.

KEYSTONE – BATH
KILN 1

- In "emiss 2," Conditions 207C1 and 207C3, and "emis 1," Conditions 207C10, 207C11, and 207C12, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- In "emiss 2, " Conditions 207C1 and 207C2, LVM calculations need to account for emissions below detection limits.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
207-CKRC.xls/ emiss 1	207C10 – Cl2 R1	0.3	nd 0.3	Value found to be below detection limit.
207-CKRC.xls/ emiss 1	207C10 – Cr+6 R2	0.1	nd 0.1	Value found to be below detection limit.
207-CKRC.xls/ emiss 1	207C11 – HC R3	0.7	7	Revised value provided by facility
207-CKRC.xls/ emiss 1	207C11 – HCl & Cl_2 units	g/s	ppmv	Table B-1 of test report provides emissions in ppmv. Correction to 7% O_2 can be done without using conversion factors.
207-CKRC.xls/ emiss 1	207C11 – HCl R1	0.225 g/s	6.63 ppmv	ppmv value provided in test report.
207-CKRC.xls/ emiss 1	207C11 – HCl R2	0.359 g/s	9.87 ppmv	ppmv value provided in test report.
207-CKRC.xls/ emiss 1	207C11 – HCl R3	0.366 g/s	10.49 ppmv	ppmv value provided in test report.
207-CKRC.xls/ emiss 1	207C11 – Cl2 R1	0.0057 g/s	0.09 ppmv	ppmv value provided in test report.
207-CKRC.xls/ emiss 1	207C11 – Cl2 R2	0.0051 g/s	0.07 ppmv	ppmv value provided in test report.
207-CKRC.xls/ emiss 1	207C11 – Cl2 R3	0.0058 g/s	0.09 ppmv	ppmv value provided in test report.
207-CKRC.xls/ emiss 1	207C11 – HCl & Cl2 (7% O_2) R1, R2 & R3			Values corrected to 7% O_2 without converting from g/s to ppmv.
207-CKRC.xls/ emiss 1	207C12 – Cl2 R2	0.2	nd 0.2	Value found to be below detection limit.
207-CKRC.xls/ emiss 1	207C12 – Cl2 R3	0.1	nd 0.1	Value found to be below detection limit.
207-CKRC.xls/ emiss 1	207C12 – Cd R2	38.89	38.69	Value found in Table 5.2 of test report.
207-CKRC.xls/ emiss 2	207C3 – D/F Gas Flowrate R3	43875	46500	Revised value provided by facility

KEYSTONE – BATH
KILN 2

- In “emiss 2,” Conditions 208C1 and 208C3, and “emis 1,” Conditions 208C10 and 208C11, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- In the Kiln 2 feedstream spreadsheet for the November 1998 BIF test (208C10), the arsenic, beryllium and cadmium liquid waste feed rates include the spiked amounts. In addition, the spiked amounts listed are for Kiln 1 and not for Kiln 2.

- The Kiln 2 process information for the 1998 BIF test (208C10) is not correct. The ESP power, ESP inlet temperature, and the combustion chamber temperature data shown are actually for Kiln 1.

- No dioxin/furan (D/F) data are included in the spreadsheet for the September 1998 Compliance Test for Kilns 2 (208C10). The emission test report did contain D/F data.

- Run 1 in the December 1999 Trial Burn for Kiln 2 was not representative of process conditions. Therefore, these data should not be included in the database.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
208-CKRC.xls/ emiss 1	208C10 – Cl2 R1	0.48	nd 0.48	Value found to be below detection limit.
208-CKRC.xls/ emiss 1	208C10 – Cl2 R2	nd 0.2	0.2	Value found to be above detection limit.
208-CKRC.xls/ emiss 1	208C10 – Cl2 R1 (7% O_2)	0.6	nd 0.6	Corrected value should also be listed as below detection limit.
208-CKRC.xls/ emiss 1	208C11 – HCl & Cl_2 units	g/s	ppmv	Table B-1 of test report provides emissions in ppmv. Correction to 7% O_2 can be done without using conversion factors.
208-CKRC.xls/ emiss 1	208C11 – HCl R1	0.73 g/s	9.44 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – HCl R2	1.09 g/s	11.48 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – HCl R3	2.3 g/s	25.61 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – HCl R4	1.59 g/s	17.95 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – Cl2 R1	0.015 g/s	0.1 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – Cl2 R2	0.015 g/s	0.08 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – Cl2 R3	0.021 g/s	0.12 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – Cl2 R4	0.022 g/s	0.13 ppmv	ppmv value provided in test report.
208-CKRC.xls/ emiss 1	208C11 – HCl & Cl2 (7% O_2) R1, R2 & R3			Values corrected to 7% O_2 without converting from g/s to ppmv. Non-detects should be noted.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
208-CKRC.xls/ df c11	208C11 – 2,3,7,8-TCDD Run 2	110	nd 110	Value found to be below detection limit.

LONE STAR – CAPE GIRARDEAU
KILN 1

- Total Cl calculations need to be corrected for all Conditions in the spreadsheet 303.xls. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- In Condition 303C7 of the “df c7” worksheet in the 303.xls file, EPA has included data for a fourth dioxin/furan (d/f) run. Only three d/f runs were conducted for this test. The fourth run should be deleted from the database.

LONE STAR – GREENCASTLE
KILN 1

- In "emiss," Condition 3029C11, total Cl calculations need to be corrected. HCl needs to be multiplied by the molecular weight ratio between chlorine and HCl. The corrected formula should be: HCl*(35.453/36.4609) + 2*Cl_2.

- The dioxin and furan emissions results in the spreadsheets differ from those found in the stack test report because EPA has utilized a value of 1/2 of the detection limit for the congeners that were not detected.

- In the metals feedrate data, the "feed" page of the 3029.xls file, there are errors in the feedstream inputs for 3029C11. There are two input points for coal: one into the kiln and one into the calciner. Clearly the input of coal into the kiln is minor during the testing campaign - only one run used coal input to the kiln. The database should, however, be corrected.

- In the metals feedrate data, the "feed" page of the 3029.xls file, there are errors in the feedstream inputs for 3029C11. There are two inputs of raw materials into the cement clinkering system during this test condition: the slurry feed to the kiln and a separate feedstream fed directly into the calciner, flyash. These two together make up the "Total Raw Material" feed to the kiln system. Only the slurry feed to the kiln has been included in the data set. Not including the flyash means that trace metals present in the fly ash were not included in the calculations. Please note that the other test condition 3029C10 correctly utilizes the "Total Raw Material "feedrate."

- In "summ 2," Condition 3029C11, Stack Gas Conditions are from the PM and HCl/Cl2 tests, not the metals tests.

- There is some concern with how the EPA has calculated the SREs. In the case of Lone Star Greencastle, the SVM and LVM SRE values are very close to the middle of the SRE range calculated for the test condition. The Hg SRE calculated by EPA, however, is considerably higher than that calculated by Lone Star.

- There are errors in downloading the PDF files. There is an error in the file that does not allow all the pages to be displayed or downloaded.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
3029-CKRC.xls/ emiss	3029C11 – V R2	1.44	1.14	Value found in Table 6.4 of report.

TXI – MIDLOTHIAN
KILN 4

- The spreadsheet 3030.xls does not have any summary worksheets.

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
3030-CKRC.xls/ emiss	3030C1 – HCl, lb/hr, run 1	6.11	6.070	HCl numbers changed per Jay Lindholm – TXI consultant.
3030-CKRC.xls/ emiss	3030C1 – HCl, lb/hr, run 2	9	1.910	
3030-CKRC.xls/ emiss	3030C1 – HCl, lb/hr, run 3	10.63	2.690	
3030-CKRC.xls/ emiss	3030C1 – HCl, ppmv, run 1	19.4	18.416	lb/hr corrected & conversion factor corrected
3030-CKRC.xls/ emiss	3030C1 – HCl, ppmv, run 2	27.2	5.517	
3030-CKRC.xls/ emiss	3030C1 – HCl, ppmv, run 3	33.3	8.061	
3030-CKRC.xls/ emiss	3030C1 – Cl_2, ppmv, run 1	0.001	0.000	Corrected conversion factor
3030-CKRC.xls/ emiss	3030C1 – Cl_2, ppmv, run 2	0.001	0.000	
3030-CKRC.xls/ emiss	3030C1 – Cl_2, ppmv, run 3	0.002	0.001	
3030-CKRC.xls/ emiss	3030C1 – Total Cl, ppmv, run 1	19.38	17.907	HCl and Cl_2 concentrations were changed. Also all HCl was being considered Cl.
3030-CKRC.xls/ emiss	3030C1 – Total Cl, ppmv, run 2	27.18	5.365	
3030-CKRC.xls/ emiss	3030C1 – Total Cl, ppmv, run 3	33.31	7.839	
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, PM, Temperature, run 1	382	382.100	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, PM, Temperature, run 2	382	380.200	Revised value provided by facility

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, PM, Temperature, run 3	392	391.500	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, Metals, Moisture, run 1	36.4	36.380	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, Metals, Moisture, run 3	35.9	35.910	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, Metals, Temperature, run 2	382	382.100	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, Metals, Temperature, run 3	378	378.500	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, HCl/Cl_2, Temperature, run 1	361	360.600	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, HCl/Cl_2, Temperature, run 2	357	356.900	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – Sampling Train, HCl/Cl_2, Temperature, run 3	351	351.300	Revised value provided by facility
3030-CKRC.xls/ emiss	3030C1 – LVM, run 1	2.5	2.207	Did not correct for As & Be non-detects
3030-CKRC.xls/ emiss	3030C1 – LVM, run 2	1.689	1.689	
3030-CKRC.xls/ emiss	3030C1 – LVM, run 3	22.5	22.226	
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Slurry, run 1	8.04	8.05	Revised value provided by facility

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Slurry, run 2	4.33	4.27	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Slurry, run 3	4.31	4.38	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Slag, run 2	1.17	1.15	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Slag, run 3	1.15	1.17	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, WDF, run 1	82.3	82.35	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, WDF, run 2	82.5	81.37	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, WDF, run 3	39.8	39.66	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Coal, run 1	1.7	1.65	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Coal, run 2	1.4	1.37	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Coal, run 3	1.9	1.89	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Total, run 1	92.19	92.2	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Total, run 2	89.4	88.16	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feedstream, Descr, Chlorine, Total, run 3	47.16	47.1	Revised value provided by facility

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Slurry, run 1	35,920	35,920	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Slurry, run 2	18,962	18,425	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Slurry, run 3	19,580	19,013	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Slag, run 1	690	691	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Slag, run 2	5,124	4,957	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Slag, run 3	5,224	5,092	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, WDF, run 1	378,531	367,408	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, WDF, run 2	361,279	350,733	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, WDF, run 3	180,806	175,353	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Coal, run 1	7,819	7,381	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Coal, run 2	6,131	5,893	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Coal, run 3	8,631	8,224	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Total, run 1	424,019	424,065	Revised value provided by facility

Spreadsheet/ Worksheet	Item Description	Value Provided	Corrected Value	Comments
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Total, run 2	391,495	386,065	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Total, run 3	214,242	213,969	Revised value provided by facility
3030-CKRC.xls/ feed	3030C10 – Feed Rate, MTEC, Chlorine, Cond Avg, Total	343,252	341,366	Revised value provided by facility

Comment ID No. 53 – Ash Grove Cement Company

Comment Summary – Made comments on procedures to calculate SREs and the impact of handling detection limits on calculating SREs.

Comment Response – See reponses below.

Comment ID No. 53 – Ash Grove Cement Company

Dear Sir/Madam:

Ash Grove Cement Company (Ash Grove) is an American owned manufacture of cement and cement related products. Ash Grove operates nine cement manufacturing facilities located in several states in the Midwest and Pacific Northwest, making it the fourth largest producer of cement in the United States. Two of Ash Grove's facilities burn hazardous waste as a fuel source, and emissions data from one of the facilities is part of the Agency's, NESHAP: Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) --Notice of Data Availability Federal Register: July 2, 2002 (Volume 67, Number 127), Notices, Page 44452-44460. Standards established from use of this data will directly impact Ash Grove's waste burning facilities, and precedents develop by this data that become applied to cement manufacture in general may impact all of the Ash Grove plants. Ash Grove therefore has standing to offer comments on this federal register notice.

Ash Grove wishes to provide the following comments to assist the Agency in the task of compiling the emissions data from the various cement kilns involved in hazardous waste recycle. Ash Grove wishes to thank EPA for the time and resources it has provided to create this database and the efforts it is undertaking to obtain the best quality data possible for developing standards.

Ash Grove is a member of the cement kiln recycling coalition (CKRC). CKRC is a Washington, DC-based trade association representing cement companies engaged in the use of hazardous waste-derived fuels (HWDF). CKRC has provided comments on this notice. Ash Grove herein incorporates the CKRC comments by reference.

In addition to the CKRC comments that contain detail observations on the Ash Grove data provided in the database, Ash Grove respectfully requests that EPA incorporate the following items into their database.

1. Systems removal efficiency (SRE) is a calculation that can delineate the best performing emission sources. It is a typical means of showing performance of a technology, and it is similar to the destruction removal efficiency standard already applicable to waste burning cement kilns. SREs are measurements that require multiple data inputs from the various pyroprocess system inputs, and outputs. As such, EPA should develop SRE levels that take into account the variability of their measurement components, either by using a mass balance technique, or where data is unavailable to perform a mass balance, then by determining stack test run variation in SREs to estimate measurement error. For example, the amount of SVM

placed into a kiln should equal the amount of SVM that leaves the kiln if it does not that variation provides the measurement error for determining the SRE. When such detail data is unavailable, as is the case for the majority of the database sources, then determining the deviation in the SRE from one test run to the next, when those runs were conducted under similar operating conditions, provides an estimate of the variation in the SRE measurement. EPA should develop a mass balance or statistical method of estimating SRE measurement variation. These estimates should then be added to the database.

> <u>As discussed in Comment ID No. 40, EPA agrees that determining mass balances through the entire system (including calculation of the amounts of metals found in the clinker and fly ash) can be a very effective and valuable piece of information for confirming the potential accuracy of feedrate and stack gas emissions measurements, and are critical for evaluating the behavior of metals in the waste combustor systems. However, EPA does not believe they are necessary for the purposes of setting MACT limits. There is an extremely high level of confidence in both the feedrate and stack gas measurements, especially since much of the test data are from conditions where metals and chlorine feeds were spiked. SRE variability is captured through the use of three different test runs which are contained within a test condition, and through the use of a single test run conducted over a 3 to 4 hour period.</u>

2. EPA should use metals in a group class that have the least amount of detection limits in their measurements to determine SRE for that metals volatility class. For example, if lead inputs show no detection level values, while cadmium inputs are based on detection limit input measurements, then the SRE created by the lead should be applied to the volatile metal group without consideration of the SRE for Cd, since the Cd level may be biased due to the detection levels. EPA should add to the database a column indication if the SRE relied upon data that was at a detection limit.

> <u>Detection limits are conservatively accounted for in the procedures used to calculate SREs for the revised data base. Specifically, non-detects in stack gas measurements are considered at full detect, and non-detects in feedrate measurements are considered at zero (0). This effectively de-emphasizes non-detect feed contributions, as recommened by the commenter. Non-detect percentages in both feed and emissions are clearly shown in the various versions of the Access data base.</u>

Thank you for the opportunity to provide comment, contact me at (913) 319-6071 if you have questions.

Sincerely,

Michael Harrell
Corporate Resource Recovery Manager Ash Grove Cement Company

'Michael J. Harrell

Corporate Resource Recovery Manager Ash Grove Cement Company
(913) 319-6071

<u>Comment ID No. 54 – E. I. Du Pont</u>

<u>Comment Summary</u> – Comments provided on data from DuPont Unit ID No. 707.

<u>Comment Response</u> – Made most of the changes as requested.

<u>Comment ID No. 54 – E. I. Du Pont</u>

E. I. du Pont de Nemours and Company (DuPont)
Comments on EPA's NESHAP Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Final Replacement Standards and Phase II) Notice of Data Availability (67 FR 44452, July 2, 2002)

E. I. du Pont de Nemours and Company (DuPont) appreciates the opportunity to comment on EPA's Notice of Data Availability (NODA) on technical standards for hazardous waste combustors. Emission and related technical standards stemming from this NODA are expected to have significant impacts on DuPont facilities combusting hazardous wastes. DuPont owns and operates a number of hazardous waste burning incinerators and boilers in the U.S. as part of our commitment to safely manage the hazardous waste that we generate. These incinerators and boilers are operated in accordance with EPA and State regulations which establish a rigorous set of safeguards to protect human health and the environment.

DuPont supports the Agency's providing an opportunity for the regulated community to review the data being used as the basis for standards.

Before commenting on data in the NODA, DuPont would like to point out that it is premature to solicit input on data to be used as the basis for MACT standards for hazardous waste burning boilers. First, hazardous waste burning boilers have not been listed as a source category or subcategory subject to MACT regulation. It is necessary for the Agency to conduct a rulemaking under Section 112 (c)(5) of the Clean Air Act, adding hazardous waste burning boilers as a new category or subcategory as part of the process to develop MACT standards for hazardous waste burning boilers should the Agency decide to pursue development of such standards. Second, as the Agency is under a strict deadline in the settlement agreement for Sierra Club v. EPA for establishing final MACT standards for designated types of hazardous waste combustion units, it appears a wiser use of resources for the Agency to concentrate on incinerators, cement kilns, and LWAKs at this time.

<u>Response to this issue has been provided above; see Comment ID No. 37.</u>

DuPont has begun review of the DuPont-facility-specific information supplied in the NODA. Initial incinerator comments are as follows:

Results for New Incinerator Test Conditions - Results from the DuPont Sabine River Works Incinerator (ID No. 338) July 2000 trial burn and from the DuPont LaPorte CSI (ID No. 707) March-May 2001 trial burn testing are included in the NODA database. Including results from emission testing after the April 19, 1996 proposed hazardous waste combustor MACT standards seems to indicate the Agency's intent to include such new data for existing sources. DuPont is concerned that the Agency may be trying to use emission data for upgraded sources in the database for existing sources thereby effectively skewing the basis for emission standards. The Agency should strive to limit post-April 1996 data for hazardous waste incinerators in the database for existing sources to only those incinerators that have clearly NOT been upgraded in anticipation of the September 30, 1999 MACT rulemaking.

Response to this issue has been provided above; see Comment ID No. 37.

LaPorte CSI Trial Burn Testing (ID No. 707) - The spreadsheet in the database for the DuPont LaPorte Central Scrubbed Incinerator (CSI) contains stack gas emission results for HCI and Chlorine for test condition 707C10. These test results should not be included in the database. Although the source testing contractor included these results in their report for this test, these results were not included in the test report summary and were not used to show compliance due to a quality assurance non-conformance with the associated analyses. The compliance test for HCl/Chlorine was repeated in test condition 707C1 1, and only these test results should be included in the database. DuPont requests that the HCl and Chlorine test results for test condition 707C10 be removed from the database.

Change is made as requested.

Classification of Emission Test Data - EPA has attempted to classify emission test data according to the sort of test conditions under which the data was collected. DuPont is in the process of reviewing the accuracy of these classifications and plans to submit additional comment on the 21 DuPont incinerator test conditions in the database by the end of September 2002. Furthermore, DuPont is interested in gaining an understanding of what EPA plans to do with this classification information and would appreciate the opportunity for further interaction with the Agency or subsequent comment on this topic. DuPont supports the concept of using a sufficiently large variability factor when trying to make use of "normal-case" data for purposes where "worst-case" data may also be in use.

Although DuPont has noted above that it appears premature for the Agency to be developing a database in support of MACT standards for hazardous waste burning boilers, DuPont has begun review of the data for Company hazardous waste burning boilers in the database for this NODA. DuPont plans to submit comment on the information in the NODA database regarding the 6 DuPont hazardous waste burning boilers in the database and the related 22 test conditions in Oct. 2002 following submission of incinerator comments.

EPA has yet to receive any further comments on the data base from the commenter. EPA notes that the commenter will have a further opportunity to comment on the data base as part of the proposed Replacement HWC MACT Rule.

If you have any questions, please contact me via electronic mail or call me at (302) 774-8083. In the event that you cannot reach me, please contact Robert Giraud at (302) 774-8048.

Sincerely,

Debra J. Mulrooney Environmental Engineering
cc: Mr. Frank Behan (Behan.Frank@epa.gov)